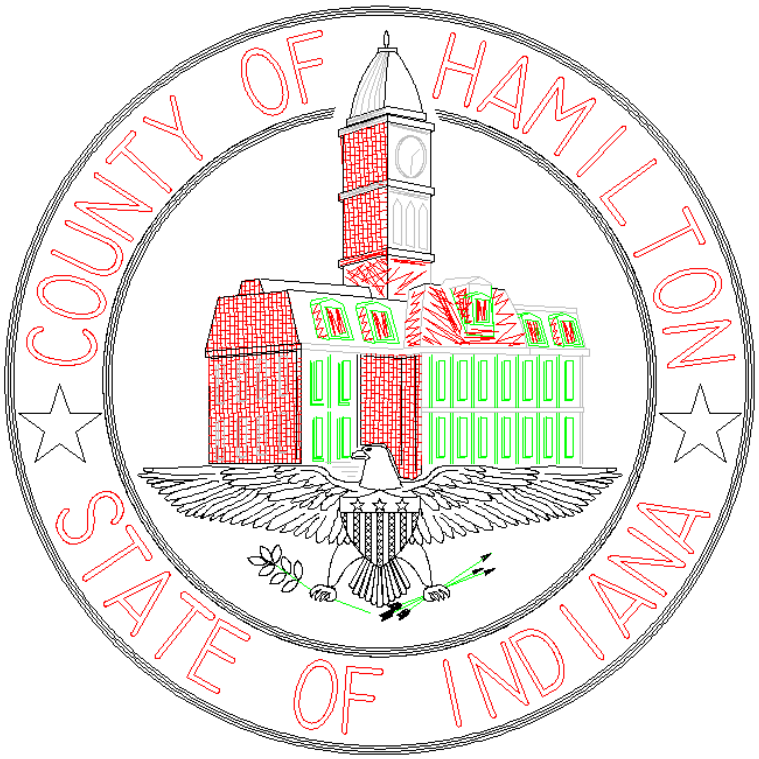
CONTRACT DOCUMENTS AND SPECIFICATIONS



HAMILTON COUNTY
HIGHWAY DEPARTMENT

REPLACEMENT PLAN FOR
SMALL STRUCTURE # 23017

191st STREET OVER UNNAMED
TRIBUTARY OF STONY CREEK

HCHD # PB 18 – 0004
WAYNE TOWNSHIPS
HAMILTON COUNTY, INDIANA

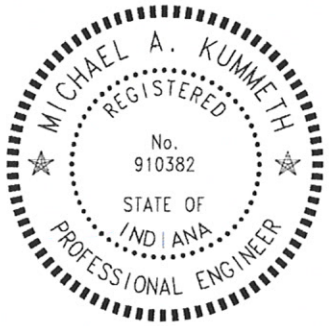
PREPARED BY:
DLZ INDIANA, LLC
138 North Delaware Street
Indianapolis, IN 46204
PH. (317) 633-4120
FAX (317) 633-4177

DLZ

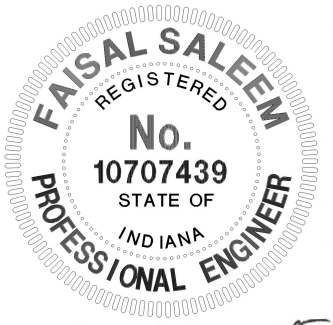
SPECIFICATIONS FOR

REPLACEMENT PLAN FOR
SMALL STRUCTURE NO. 23017
191ST STREET OVER UNNAMED
TRIBUTARY OF STONY CREEK
HCHD # PB 18 – 0004
WAYNE TOWNSHIP
HAMILTON COUNTY, INDIANA

May 4, 2021
Certified by:



5/4/2021
Michael A Kummeth
Registered Engineer No. 910382
State of Indiana
DLZ Indiana, LLC



5/4/2021
Registered Engineer No. 10707439
State of Indiana
DLZ Indiana, LLC

PREPARED BY:
DLZ INDIANA, LLC
138 North Delaware Street
Indianapolis, IN 46204
PH. (317) 633-4120
FAX (317) 633-4177

DLZ

TABLE OF CONTENTS

NOTICE TO BIDDERS AND CONTRACTORS

Notice is hereby given that the Board of Commissioners of Hamilton County, Indiana, hereinafter referred to as the OWNER, will receive sealed bids for the following project:

REPLACEMENT PLAN FOR SMALL STRUCTURE NO. 23017
191ST STREET OVER UNNAMED TRIBUTARY OF STONY CREEK
PB 18 – 0004
WAYNE TOWNSHIP
HAMILTON COUNTY, INDIANA

Proposals may be forwarded individually by registered mail or delivered in person, addressed to the Hamilton County Auditor, 33 North 9th Street, Suite L21, Noblesville, Indiana, 46060, prior to 12:30 p.m., June 14, 2021. After 12:30 pm they can be delivered to the Auditor in Hamilton County Commissioners Courtroom up to the time of the noticed bid opening. Only proposals from those Prime Contractors who are registered on the Indiana Department of Transportation current listing of Prequalified Contractors for item D(A) "Bridges: Highway Over Water" will be considered. Any bids submitted by Contractors not approved for this item on the list will be returned to the bidder unopened.

All proposals will be considered by the OWNER at a public meeting held in the Hamilton County Government & Judicial Center at Noblesville, Indiana, Commissioner's Courtroom, and opened and read aloud at 1:45 p.m. local time, June 14, 2021.

The work to be performed and the proposals to be submitted shall include a bid for all general construction, labor, material, tools, equipment, taxes, (both federal and state), permits licenses, insurance, service costs, etc. incidental to and required for this project.

All materials furnished and labor performed incidental to and required by the proper and satisfactory execution of the contract to be made, shall be furnished and performed in accordance with requirements from the drawings and specifications included in the contract documents, which will be on file at **DLZ Indiana, LLC, 138 North Delaware Street, Indianapolis, Indiana, 46204**, beginning at **8:30 a.m. on May 12, 2021**, and may be obtained for the sum of $75.00 plus shipping for the contract documents and specifications, of which none is refundable. Payment shall be by money order or check and shall be made payable to DLZ Indiana, LLC. Interested parties can view the Contract Documents at www.hamiltoncounty.in.gov/bids.asp. Documents posted online are for **informational purposes only**. It shall be the responsibility of the individual to periodically check for addendums issued until the bid date. Hamilton County is not responsible for any errors or omissions in the documents posted online. Only those who purchase Contract Documents will be automatically notified of addenda. Contract Documents **must be purchased** to be eligible to bid on this contract.

Each individual proposal must be enclosed in a sealed envelope with the county supplied sealed bid notice bearing the title of the project, bid opening date and the name of the bidder firmly affixed. All mailer packets shall have a separately sealed envelope inside the mailer with the county supplied sealed bid notice firmly affixed to the inside sealed bid. Each proposal must be submitted separately. The bidder shall affix identifying tabs to the following sheets of each proposal as mentioned below:

Form 96	Financial Statement
Non-Collusion Affidavit	Receipt of Addendum (If Applicable)
Bid Bond	Itemized Proposal
Employment Eligibility Verification	Drug Testing Program Compliance

Each individual proposal shall be accompanied by a certified check or acceptable **bidder's bond**, made payable to the Hamilton County Auditor, in a sum of not less than ***ten percent*** (10%) of the total amount of the proposal, which check or bond will be held by the said Hamilton County Auditor as evidence that the bidder will, if awarded a contract, enter into the same with the OWNER upon notification from him to do so within ten (10) days of said notification. Failure to execute the contract and to furnish performance bond to Hamilton County, Indiana, will be cause for

forfeiture of the amount of money represented by the certified check, or bidder's bond, as and for liquidated damages. Form 96, as prescribed by the Indiana State Board of Accounts, shall be properly completed, and submitted with bid proposals. The Commissioners at their discretion reserve the right to waive any and all informalities in the bidding. All bids submitted shall be good for 120 days from the opening of the bids.

Robin Mills
Hamilton County Auditor

Dated:	April 30, 2021
Noblesville Times:	May 12, 2021 and May 19, 2021
Hamilton County Reporter:	May 17, 2021 and May 24, 2021

BID SEAL
< NOTICE >

Sealed Bid Documents shall contain on the outside of the sealed envelope the following completed self-sticking label:

SEALED BID DOCUMENTS

(To be completed by bidder before submission)

Equipment Type _____

Annual Bid Category #

Road Contract # / Bridge # (Desc.) _____
(Circle One)

Name of Bidder: _____

Bid Opening Date: _____

Other Documents Enclosed:

Bid Bond	(Y)	(N)
Certified Check	(Y)	(N)
Form HC BID 06 / 03	(Y)	(N)
Form 96	(Y)	(N)
Other		

For Hamilton County Use Only!
Received by the Auditor
File Stamp

Time Received: _____

All mailer packers will be opened upon receipt.
Make sure the sealed envelope is contained within.

< NOTICE >

PROPOSAL

To the Board of County Commissioners of Hamilton County, of the State of Indiana; hereinafter referred to as OWNER:

REPLACEMENT PLAN FOR
SMALL STRUCTURE NO. 23017
191ST STREET OVER UNNAMED
TRIBUTARY OF STONY CREEK
HCHD # PB 18 – 0004
WAYNE TOWNSHIP
HAMILTON COUNTY, INDIANA

Pursuant to the legal notice that sealed proposals for the above project would be received by the Board of County Commissioners of Hamilton County, Indiana,

The undersigned hereby tenders this bid to construct the work in accordance with the plans, profiles, drawings, specifications, and all authorized revisions for this contract which are on file in the office of the Hamilton County Highway Department; and to furnish all necessary machinery, equipment, tools, labor and other means of construction and to furnish all material specified in the manner and at the time prescribed and under the supervision and direction of the OWNER or his duly authorized representative and pursuant to the terms of the Performance Bond and the Payment Bond in the amount of not less than One Hundred Percent (100%) of the amount of the Proposal, for the unit prices given on the attached Itemized Proposal dated May 4, 2021.

Together with this PROPOSAL, the undersigned has:

A. Filed an Itemized Proposal with a unit price for each item listed, together with a total amount for all items, based upon the unique characteristics of this contract;

B. Executed the Form No. 96 filed herewith;

C. Filed a properly executed Bid Bond or certified check made payable to the Hamilton County Treasurer herewith in an amount greater than or equal to ten percent (10%) of the total amount of this proposal;

D. Executed the Non-Collusion affidavit filed herewith;

E. Executed the Legal Status of Bidder Form filed herewith;

F. Filed a current Financial Statement herewith;

G. Filed an Employment Eligibility Verification Form herewith;

H. Drug Testing Program Compliance

If awarded the contract, the undersigned promises to prosecute the work so as to complete the contract within the time specified in the Special Provisions.

Witness our hands this_____day of,_____20___.

Firm Name :_____

Address :_____

_____

_____

By :_____
(Signature)

Name :_____
(Printed)

Title :_____
(Printed)

ITEMIZED PROPOSAL

Replacement Plan for Small Structure No. 23017 191st Street over Unnamed Tributary of Stony Creek

HCHD # PB 18-0004 ITEMIZED PROPOSAL DATE: May 4, 2021

LETTING DATE: June 14, 2021

CONTRACTOR:_____

SCHEDULE OF PAY ITEMS

LINE NO	ITEM DESCRIPTION	INDOT / SP #	UNITS	QTY	UNIT PRICE		BID AMOUNT	
					DOLLARS	CENTS	DOLLARS	CENTS
1	CONSTRUCTION ENGINEERING	105	LS	1.0				
2	MOBILIZATION AND DEMOBILIZATION	110	LS	1.0				
3	CLEARING RIGHT OF WAY	201 / SP 19	LS	1.0				
4	FENCE, FARM FIELD, REMOVE	202	LFT	627.0				
5	PRESENT STRUCTURE REMOVE (SS 23017)	202 / SP 23	LS	1.0				
6	EXCAVATION, COMMON*	203 / SP 42	CYS	2,296.0				
7	BORROW	203	CYS	1,615.0				
8	STORM WATER MANAGEMENT BUDGET	205	DOL	21,680.0	$ 1.00		$21,680.00	
9	STORMWATER MANAGEMENT IMPLEMENTATION	205	LS	1.0				
10	SWQCP PREPARATION	205	LS	1.0				
11	PUMP AROUND	205 / SP 43	EACH	1.0				
12	SUBGRADE TREATMENT, TYPE II	207	SYS	68.0				
13	SUBGRADE TREATMENT, TYPE IC	207	SYS	3,179.0				
14	STRUCTURE BACKFILL TYPE 1**	211	CYS	10.0				
15	STRUCTURE BACKFILL TYPE 2**	211 / SP 39	CYS	1,180.0				
16	GEOTEXTILE FOR SUBGRADE, TYPE 2B*	214 / SP 42	SYS	159.0				
17	COMPACTED AGGREGATE NO 5*	301 / SP 42	CYS	40.0				
18	COMPACTED AGGREGATE NO 53*	301	CYS	33.0				
19	COMPACTED AGGREGATE NO 53	303	TON	194.0				
20	COMPACTED AGGREGATE NO 73	303	TON	62.0				
21	MILLING, ASPHALT, 1 1/2 IN.	306	SYS	281.0				
22	JOINT ADHESIVE, SURFACE	401	LFT	875.0				
23	JOINT ADHESIVE, INTERMEDIATE	401	LFT	775.0				
24	HMA, SURFACE, TYPE C	402 / SP 26	TON	257.0				
25	HMA, INTERMEDIATE, TYPE C	402 / SP 26	TON	463.0				

LINE NO	ITEM DESCRIPTION	INDOT / SP #	UNITS	QTY	UNIT PRICE		BID AMOUNT	
					DOLLARS	CENTS	DOLLARS	CENTS
26	HMA, BASE, TYPE C	402 / SP 26	TON	926.0				
27	ASPHALT FOR TACK COAT	406	TON	2.0				
28	GUARDRAIL TERMINAL SYSTEM, W BEAM, CURVED, 6	601	EACH	1.0				
29	GUARDRAIL END TREATMENT, TYPE OS (31")	601 / SP 27	EACH	3.0				
30	GUARDRAIL, MGS, W-BEAM, 6'-3" SPACING	601	LFT	400.00				
31	GUARDRAIL MGS, HEIGHT TRANSITION	601	EACH	1.0				
32	HMA FOR APPROACHES, TYPE B	610	TON	26.0				
33	MAILBOX ASSEMBLY, SINGLE	611	EACH	2.0				
34	RIGHT OF WAY MARKER	615	EACH	13.0				
35	MONUMENT, B	615	EACH	3.0				
36	MONUMENT SECTION CORNER	615 / SP 32	EACH	1.0				
37	RIPRAP, REVETMENT	616	TON	349.0				
38	GEOTEXTILE FOR RIPRAP, TYPE 1A	616	SYS	327.0				
39	MOBILIZATION AND DEMOBILIZATION FOR SEEDING	621	LS	1.0				
40	SEED MIXTURE R	621 / SP 28	LBS	152.0				
41	EROSION CONTROL BLANKET	621	SYS	3,626.0				
42	PIPE, TYPE 4, CIRCULAR, 4 IN.*	715	LFT	100.0				
43	PIPE, TYPE 4, CIRCULAR, 8 IN.*	715	LFT	20.0				
44	PIPE, TYPE 4, CIRCULAR, 10 IN.*	715	LFT	20.0				
45	PIPE, TYPE 4, CIRCULAR, 12 IN.*	715	LFT	20.0				
46	PIPE, TYPE 3, CIRCULAR, 15 IN.	715	LFT	108.0				
47	PIPE END SECTION, DIANMETER 15 IN.	715	EACH	5.0				
48	GEOTEXTILE FOR UNDERDRAIN, TYPE 1A	718	SYS	537.0				
49	INLET, E7	720	EACH	1.0				
50	STRUCTURE, REINFORCED CONCRETE, THREE-SIDED SECTIONS, 192 X 108 IN.	723	LFT	67.0				
51	MAINTAINING TRAFFIC	801	LS	1.0				
52	ROAD CLOSURE SIGN ASSEMBLY	801 / SP 31	EACH	4.0				
53	DETOUR ROUTE MARKER ASSEMBLY	801 / SP 30	EACH	20.0				
54	CONSTRUCTION SIGN, A	801	EACH	8.0				
55	CONSTRUCTION SIGN,B	801	EACH	2.0				
56	BARRICADE, III-A	801	LFT	48.0				

LINE NO	ITEM DESCRIPTION	INDOT / SP #	UNITS	QTY	UNIT PRICE		BID AMOUNT	
					DOLLARS	CENTS	DOLLARS	CENTS
57	BARRICADE, III-B	801	LFT	48.0				
58	LINE, THERMOPLASTIC, SOLID, WHITE, 4 IN.	808	LFT	1,750.0				
59	LINE, THERMOPLASTIC, SOLID, YELLOW, 4 IN.	808	LFT	1,750.0				
					TOTAL			

PRINTED TOTAL

*Includes Undistributed Quantity
**Quantity Shown to be the Final Pay Quantity

SUBMITTED BY: _____

SIGNATURE: _____

PRINTED NAME: _____

TITLE: _____

ADDRESS: _____

_____

_____

ACKNOWLEDGMENT OF ADDENDA

The Contractor acknowledges receipt of the following addenda which are hereby made a part of this Construction Contract, as fully and effectually as if copied and set out herein in full length:

ADDENDUM NUMBER AND DATE	SIGNATURE	DATE

BID BOND

KNOWN BY ALL PERSONS BY THESE PRESENTS THAT THE UNDERSIGNED:

BIDDER: _____

_____

as principal, and SURETY:

[Name] _____

[Address] _____

_____
as Surety,

are firmly bound unto Hamilton County, Indiana in the full and just sum of an amount equal to TEN PERCENT of the amount of the Principal's bid, to the payment of which, well and truly to be made, we bind ourselves jointly and severally, and our joint and several heirs, executors, administrators and assigns, firmly by these presents.

THE CONDITIONS OF THE ABOVE OBLIGATIONS ARE SUCH THAT, whereas, the Principal is herewith submitting a bid and proposal for construction and completion of this contract in accordance with plans and specifications, which are made part of this bond;

NOW, THEREFORE, if Hamilton County shall award the Principal the contract and the Principal shall promptly, enter into contract with Hamilton County, then this obligation shall be void; otherwise to remain in full force, virtue, and effect.

IT IS AGREED that no modifications, omissions, or additions in or to the terms of such contract or in or to the plans or specifications therefor shall affect the obligation of such sureties on this bond.

IN WITNESS WHEREOF, we hereto set our hands and seals:

< <BIDDER > >

(Bid Bond)

_____
(Signature)

_____
(Printed)

_____
(Title)

State of Indiana, County of,_____, SS:
Before me, the undersigned Notary Public, personally appeared;
_____ As Principal and acknowledged the execution of the above bond on this_____Day of _____, 20___.
My commission Expires:_____

_____
(County of Residence)_____(Notary Signature & Seal)

< <SURETY > >

(Bid Bond)

_____
(Signature)

_____
(Printed)

_____
(Title)

State of Indiana, County of, , SS:
Before me, the undersigned Notary Public, personally appeared;
_____ As Principal and acknowledged the execution of the above bond on this_____Day of_____, 20___.
My commission Expires:

_____
(County of Residence) (Notary Signature & Seal)

PAYMENT BOND

KNOWN BY ALL PERSONS BY THESE PRESENTS THAT THE UNDERSIGNED:

BIDDER:_____

_____

as principal, and SURETY:

[Name] _____

[Address] _____

_____

as Surety,

are firmly bound unto Hamilton County, Indiana in the penal sum of an amount equal to ONE HUNDRED PERCENT of the amount of the Principal's bid, to the payment of which, well and truly made, we bind ourselves jointly and severally, and our joint and several heirs, executors, administrators and assigns, firmly by these presents.

THE CONDITIONS OF THE ABOVE OBLIGATIONS ARE SUCH THAT, whereas, the Principal is herewith submitting a bid and proposal for construction and completion of this contract in accordance with plans and specifications, which are made part of this bond;

NOW, THEREFORE, if Hamilton County shall award the Principal the contract for work and the Principal shall promptly enter into contract with Hamilton County, for the work and shall promptly make payments of all amounts due to all Claimants, then this obligation shall be void; otherwise to remain in full force, virtue, and effect. Claimant shall mean any subcontractor, material supplier or the person, firm, or corporation furnishing materials or equipment for or performing labor or services in the prosecution of the work provided in such an agreement, including lubricants, oil, gasoline, coal, and coke, repairs on machinery, and tools, whether consumed or used in connection with the construction of such work, and all insurance premiums on said work, and for all labor, performed in such work.

IT IS AGREED that no modifications, omissions, or additions in or to the terms of such contract or in or to the plans or specifications therefor shall affect the obligation of such sureties on this bond.

IN WITNESS WHEREOF, we hereto set our hands and seals:

< <BIDDER > >

(Payment Bond)

_____
(Signature)

_____
(Printed)

_____
(Title)

State of Indiana, County of,_____, SS:
Before me, the undersigned Notary Public, personally appeared;
_____ As Principal and acknowledged the execution of the above bond on this_____Day of_____, 20___.
My commission Expires:

_____
(County of Residence)_____(Notary Signature & Seal)

< <SURETY > >
(Payment Bond)

_____
(Signature)

_____
(Printed)

_____
(Title)

State of Indiana, County of,_____, SS:
Before me, the undersigned Notary Public, personally appeared;
_____ As Principal and acknowledged the execution of the above bond on this_____Day of_____, 20___.

My commission Expires: _____

_____
(County of Residence) (Notary Signature & Seal)

PERFORMANCE BOND

KNOWN BY ALL PERSONS BY THESE PRESENTS THAT THE UNDERSIGNED:

BIDDER: _____

_____

as principal, and SURETY:

[Name] _____

[Address] _____

_____

as Surety,

are firmly bound unto Hamilton County, Indiana in the penal sum of an amount equal to ONE HUNDRED PERCENT of the amount of the Principal's bid, to the payment of which, well and truly made, we bind ourselves jointly and severally, and our joint and several heirs, executors, administrators and assigns, firmly by these presents.

THE CONDITIONS OF THE ABOVE OBLIGATIONS ARE SUCH THAT, whereas, the Principal is herewith submitting a bid and proposal for construction and completion of this contract in accordance with plans and specifications, which are made part of this bond;

NOW, THEREFORE, if Hamilton County shall award the Principal the contract for work and the Principal shall promptly enter into contract with Hamilton County, for the work and shall well and faithfully do and perform the same in all respects according to the plans and specifications and according to the time, terms, and conditions specified in this contract to be entered into, and in accordance with all requirements of law and shall promptly pay all debts incurred by the Principal or a subcontractor in the construction of the work, including labor, service, and materials furnished, and shall remain in effect at least until one year after the date when final payment becomes due, then this obligation shall be void; otherwise to remain in full force, virtue, and effect.

IT IS AGREED that no modifications, omissions, or additions in or to the terms of such contract or in or to the plans or specifications therefor shall affect the obligation of such sureties on this bond.

IN WITNESS WHEREOF, we hereto set our hands and seals:

< <BIDDER > >
(Performance Bond)

_____
(Signature)

_____
(Printed)

_____
(Title)

State of Indiana, County of,_____, SS:
Before me, the undersigned Notary Public, personally appeared;
_____ As Principal and acknowledged the execution of the above bond on this_____Day of_____, 20___.
My commission Expires: _____

_____
(County of Residence) (Notary Signature & Seal)

< <SURETY > >
(Performance Bond)

_____
(Signature)

_____
(Printed)

_____
(Title)

State of Indiana, County of,_____, SS:
Before me, the undersigned Notary Public, personally appeared;
_____ As Principal and acknowledged the execution of the above bond on this_____Day of _____, 20___.
My commission Expires: _____

_____
(County of Residence) (Notary Signature & Seal)

NON-COLLUSION AFFIDAVIT

STATE OF_____)
) SS
COUNTY OF_____)

The undersigned contractor, being duly sworn, on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by it, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone, nor to prevent any person from bidding nor to induce anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding in any way or manner whatever.

BY :_____
(Signature)

_____
(Title)

FOR :_____
(Firm or Corporation)

State of Indiana, County of,_____, SS:
Before me, the undersigned Notary Public, personally appeared;

_____ As Principal and acknowledged the execution of the above

bond on this_____Day of _____, 20___.

My commission Expires: _____

_____
(County of Residence) (Notary Signature & Seal)

LEGAL STATUS OF BIDDER

This Proposal is submitted in the name of:

Firm Name_____

The undersigned hereby designates below his business address to which all notices, directions or other communications may be served or mailed:

Street :_____

City :_____

State :_____Zip Code:_____

The undersigned hereby declares that he has legal status checked below:

( ) INDIVIDUAL
( ) INDIVIDUAL DOING BUSINESS UNDER AN ASSUMED NAME
( ) CO-PARTNERSHIP (The Assumed name of the partnership is registered in the County of , Indiana.
( ) CORPORATION INCORPORATED UNDER THE LAWS OF THE STATE OF . The Corporation is:
( ) LICENSED TO DO BUSINESS IN INDIANA
( ) NOT NOW LICENSED TO DO BUSINESS IN INDIANA

The name, titles and home address of all persons who are officers or Partners in the organization are as follows:

NAME AND TITLE_____ HOME ADDRESS

_____

_____

_____

Signed and Sealed this_____day of _____. 20___.

By_____
(Signature)

_____
(Printed)

_____
(Title)

PROGRESS ESTIMATE
HAMILTON COUNTY
HIGHWAY DEPARTMENT
1700 South 10th Street
NOBLESVILLE, IN 46060
(317) 773 – 7770 Office
(317) 776 – 9814 Fax

PROJECT:

PROGRESS ESTIMATE NO

PARTIAL □ FINAL □

PAY NO.	ITEM	UNITS	UNIT PRICE	PLAN QUANTITY	QUANTITY THIS ESTIMATE	QUANTITY TO DATE	EXTENSION

CONTRACTOR :_____ TOTAL EARNINGS TO DATE :

BY :_____ DATE:_____ LESS RETAINED PERCENTAGE:

APPROVED BY :_____ DATE: _____ PREVIOUS AMOUNT :

APPROVED BY :_____ DATE:_____ AMOUNT DUE CONTRACTOR :

CHANGE ORDER

HCHD FORM 1063 REV 05-02-02

HAMILTON COUNTY HIGHWAY DEPARTMENT

Page: _____

CHANGE ORDER

Project No. _____ Contract No. _____

Project Description: _____ Change Order No. _____

Whereas, the Standard Specifications for this contract provides for such work to be performed, the following change is recommended. (Give location, description and reason)

_____

_____

_____

_____

ITEM NO.	DESCRIPTION OF ITEM	UNIT	UNIT PRICE	INCREASE		DECREASE		% CHANGE	
				QUANTITY	AMOUNT	QUANTITY	AMOUNT	THIS C.O.	TO DATE
	PLACE EW FOR EXTRA WORK ITEMS PLACE FA FOR FORCE ACCOUNT ITEMS		TOTALS						
			NET	XXXXXXXXX					
				XXXXXXX	ESTIMATED COST		$	-	

This contract has been extended / reduced (circle one) by 0 work / calendar (circle one) days or the completion has been moved to 0 to accommodate the changes made in this change order. It is the intent of the parties that this change order is full and complete compensation for the work described above. Notification and consent to this change in plans is hereby acknowledged.

Contractor : _____ By: _____ Date: _____

Submitted for Consideration	
Project Engineer	Construction Engineer
County Engineer	Highway Director

Title: _____

_____

_____

_____

HCHD # PB 18-0004
Small Structure #23017

AFFIDAVIT AND WAIVER OF LIEN

□ Final □ Partial □ Payment to Follow

State of Indiana, County of _____ SS
_____ Being duly sworn states that he is the _____of
(Name of Officer) (Title)

_____having contracted with _____to furnish certain

materials and/or labor as follows_____
(Description)
for the project known as _____

located at_____and owned by _____Hamilton County_____
(Owner)
and does hereby further state on behalf of the aforementioned subcontractor/supplier:_____
(*PARTIAL WAIVER)* that there is due from the *CONTRACTOR* the sum of_____
_____ Dollars ($_____)

( ) receipt of which is hereby acknowledged; or
( ) the payment of which has been promised as the sole consideration of this affidavit and Partial Waiver of Lien which is given solely with respect to said amount and which waiver shall be effective only upon receipt of payment thereof by the undersigned:

(FINAL WAIVER) that the final balance due from the *CONTRACTOR* is the sum of_____
_____ Dollars ($_____)

(_____) receipt of which is hereby acknowledged or
(_____) the payment of which has been promised as the sole consideration for the Affidavit and Final Waiver of Lien which shall become effective upon receipt of such payment

THEREFORE, the undersigned waives and releases unto the OWNER of said premises, any and all lien or claim whatsoever on the above-described property and improvements thereon on account of LABOR or material or both, furnished by the undersigned thereto, subject to limitations or conditions expressed herein, if any; and further certifies that no other party has any claim or right to a lien on account of any work performed or material furnished to the undersigned for said project, and within the scope of this affidavit and waiver.

_____By _____Title _____
(Firm) (Authorized Representative)

WITNESS MY HAND AND NOTARIAL SEAL this _____day of _____20____

_____
(Notary Public)

My Commission Expires _____ _____
Printed
Residing in _____County,

CERTIFICATION LETTER

TO BE COMPLETED BY ALL SUB-CONTRACTORS AND MATERIAL SUPPLIERS

Reference:

REPLACEMENT PLAN FOR
SMALL STRUCTURE NO. 23017
191ST STREET OVER UNNAMED
TRIBUTARY OF STONY CREEK
HCHD # PB 18 – 0004
WAYNE TOWNSHIP
HAMILTON COUNTY, INDIANA

We hereby certify that we have examined the Contract Plans and Specifications for this project and that all materials and workmanship will be in strict compliance therewith.

_____
Company Name

_____
Address

_____

_____

By_____
(Signature)

_____
(Printed)

_____
(Title)

Date_____

Describe Item of work or material to be furnished: _____

_____

_____

EMPLOYMENT ELIGIBILITY VERIFICATION CERTIFICATION

This Certification is submitted by the undersigned, _____, as part of the contract with Hamilton County for the project known as _____ entered into on the _____ day of _____, 20__. The undersigned affirms under the penalties of perjury that the Contractor does not knowingly employ an unauthorized alien.

The Contractor shall enroll in and verify the work eligibility status of all newly hired employees through the E-Verify program as defined in IC 22-5-1.7-3. The Contractor is not required to participate if the Contractor is self-employed and does not employ any employees.

The Contractor shall not knowingly employ or contract with an unauthorized alien. The Contractor shall not retain an employee or contract with a person that the Contractor subsequently learns is an unauthorized alien.

The Contractor shall require all subcontractors who perform work under its contract, to certify to the Contractor that:

1. The subcontractor does not knowingly employ or contract with an unauthorized alien;
2. The subcontractor has enrolled and is participating in the E-Verify program. The Contractor agrees to maintain this certification at least two years after the term of a contract with a subcontractor.

The County may terminate the contract if the Contractor fails to cure a breach of this provision no later than thirty (30) days after being notified by the County.

The terms of this Certification shall be incorporated within the contract between the Contractor and the County.

Witness this _____ day of _____, 2021.

Contractor: _____

Address: _____

_____

Signature: _____, _____

Printed: _____ Title _____

Drug Testing Program
IC -4-13-18

This is submitted by the undersigned, _____, as part of the contract with Hamilton County for the project known as _____ entered into on the _____ day of _____, 20__. The undersigned affirms under the penalties of perjury that the Contractor has a drug testing program in compliance with IC 4-13-18 and the program shall continue during the term of the contract with Hamilton County.

The Contractor shall also require the maintenance of a drug testing program from all subcontractors who perform work under its contract.

The County may terminate the contract if the Contractor fails to comply with the terms of IC 4-13-18 provision no later than thirty (30) days after being notified by the County.

The terms of this requirement shall be incorporated within the contract between the Contractor and the County.

I, _____, verify under the penalties of perjury that all requirements of Drug Testing Program per IC 4-13-18 are in compliance:

Witness this _____ day of _____, 20___.

Contractor: _____

Address: _____

_____

Signature: _____, _____

Printed: _____ Title_____

GENERAL PROVISIONS INDEX

GENERAL PROVISIONS

GP 1 CONTRACT QUESTIONS

Submit all questions in writing to DLZ INDIANA, LLC (Contact: Faisal Saleem at fsaleem@dlz.com) prior to 9:00 a.m. local time June 7, 2021. A written response will be faxed and mailed to the addresses on the Record of Plans Purchased that is required to be filled out by anyone purchasing plans. No questions will be answered by telephone.

GP 2 PUBLIC OPENING OF BIDS

Bids will be opened publicly and read aloud at 1:45 p.m. local time, June 14, 2021 in the Hamilton County Government & Judicial Center in Noblesville, Indiana, Commissioner's Courtroom. Bidders, or their authorized agents, are invited to be present. Any Bids received after 1:45 p.m. local time June 14, 2021 will be returned to the bidder unopened.

GP 3 NOTIFICATION OF WORK SCHEDULE

The CONTRACTOR shall provide a listing of the next workday's work activities by 12:00 p.m. of that day's work for the ENGINEER'S scheduling and inspection. All work scheduled for Monday shall be provided on Friday of the preceding week.

Failure to provide such notice within the specified time may result in the failure of the ENGINEER to pay for any material placed that day.

GP 4 WARRANTY OF WORK

The CONTRACTOR warrants and guarantees for **one year** after final acceptance of the contract, to the OWNER that all work will be performed, supplied, furnished and installed, and that the work will perform in strict accordance with the Contract Documents and will not be defective. Notice of all work determined or suspected to be defective or not in conformity with the Contract Documents shall be given to the CONTRACTOR within reasonable time after observance thereof.

GP 5 EXAMINATION OF THE PROJECT SITE

Before the bid date, all bidders shall carefully and thoroughly examine the entire site of the proposed work, adjacent premises, various means of approach, access thereto by means of a site inspection visit, and make all necessary investigations to inform themselves thoroughly as to the facilities necessary for delivering, placing, and operating the necessary construction equipment, and for delivering and handling materials at the site, and shall inform themselves thoroughly as to any and all actual or potential difficulties, hindrances, delays, and constraints involved in the commencement, prosecution and completion of the proposed work in accordance with the requirements of this contract. The CONTRACTOR, by the execution of the Contract, shall in no way be relieved of any obligation under it, due to his failure to receive or examine any form or legal instrument, or to visit the site and acquaint himself with the conditions there existing. The OWNER will be justified in rejecting any claim based on facts, which he should have noticed as a result thereof.

GP 6 CONTRACT DOCUMENTS

The Indiana Department of Transportation, Standard Specifications dated 2020 together with most recently published Supplemental Specifications shall be used in conjunction with these Plans, Contract Forms, General Provision, Special Provisions, Modifications to the Specifications, Standard Sheets and any addenda which may be issued for this project.

It is the intent of these Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance therewith. Any work, materials or equipment that may reasonably be inferred will be supplied whether or not specifically called for.

Wherever reference is made to the Indiana Department of Transportation, Director, or Chief Highway Engineer, it shall be interpreted as the Board of County Commissioners of Hamilton County, Indiana.

GP 7 CONTRACTOR

The Firm or Corporation with whom the OWNER has entered into the Construction Contract.

GP 8 OWNER

The Board of County Commissioners of Hamilton County, Indiana

GP 9 ENGINEER

Hamilton County Highway Engineer or its authorized representative.

GP 10 NOTICE TO PROCEED

The CONTRACTOR shall start to perform the work on the date designated in the written Notice to Proceed, but no work shall be done at the site prior to the date of the Notice to Proceed.

GP 11 COUNTY

County of Hamilton, State of Indiana.

GP 12 PRE-QUALIFICATION AND BIDDING

CONTRACTOR shall meet all the requirements setout in Section 102.00. Only bids from those CONTRACTORS who are currently registered on the Indiana Department of Transportation's listing of Prequalified Contractors for items D(A) "Bridges: Highway Over Water" will be considered. Any bids submitted by CONTRACTORS not on this list will be returned to the bidder unopened.

GP 13 AWARD OF CONTRACT

The OWNER reserves the right to reject any or all bids or to waive any informalities and to accept the bid, which it deems favorable to the interest of the OWNER after all bids have been examined and scrutinized.

GP 14 PROOF OF INSURANCE

CONTRACTOR shall not commence work until he has obtained all insurance specified herein, has filed with the OWNER one (1) copy of Certificate of insurance, and such insurance has been approved by the OWNER.

Should any coverage approach expiration during the Contract period, it shall be renewed prior to its expiration, and certificate again filed with the OWNER. If any of such policies are canceled or are changed so as to reduce the coverage evidenced by the Certificate, at least ten (10) days prior written notice by registered mail of such cancellation or change shall be sent to the OWNER.

All insurance provided for under this Section shall be written by Insurance Companies licensed to do business in Indiana and countersigned by registered Indiana agent. The insurance company shall file with the OWNER, one (1)

copy of Affirmation of Authority, on the form furnished by the OWNER, as verification of the resident agent.

All insurance shall be maintained in full force and effect until the Contract has been fully and completely performed.

GP 15 ADDITIONAL INSURED

CONTRACTOR shall submit Certificate of Insurance indicating the above necessary coverage as well as naming OWNER, its employees and representatives and ENGINEER as Additional Insured on all policies except Worker's Compensation.

GP 16 INSURANCE

Hamilton County's insurance requirements can be found at, this contract entail Insurance + Pollution.
https://www.hamiltoncounty.in.gov/1645/Certificates-Of-Insurance

GP 17 INSPECTION OF WORK

The ENGINEER and his representatives shall at all times have access to the work wherever it is in preparation or in progress.

If the specifications, the ENGINEER's instructions, laws, ordinances or any public authority requires any work to be specially tested or approved, the CONTRACTOR shall give the ENGINEER timely notice of its readiness for inspection and, if the inspection is by an authority other than the ENGINEER, the date fixed for such inspection. If any work should be covered up without the approval or consent of the ENGINEER, it must, if required by the ENGINEER, be uncovered for examination at the CONTRACTOR'S expense.

GP 18 STANDARDS OF QUALITY

All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for in the Contract Documents shall expressly run for the benefit of the OWNER. If requested by the ENGINEER, the CONTRACTOR shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

GP 19 UTILITIES

The CONTRACTOR shall be responsible for contacting and coordinating with all utilities affected by this project. Contract time will be charged unless the CONTRACTOR can show written evidence that he is making every possible effort on his part to get the utility work completed.

GP 20 PROGRESS SCHEDULE

Within ten (10) days after the date of the Notice to Proceed, the CONTRACTOR shall submit to the ENGINEER for review a proposed schedule indicating the starting and completion dates of the various stages of the work to be performed under this contract. The ENGINEER shall review the proposed schedule to determine conformity with the contract and will make recommendations to the OWNER concerning approval thereof; however the review, approval or other action taken by the ENGINEER or OWNER in respect of such schedules shall not relieve the CONTRACTOR of its obligations to perform the work within the contract schedule(s).

GP 21 PRE-CONSTRUCTION CONFERENCE

Before the CONTRACTOR is issued a Notice to Proceed, a conference attended by the OWNER, ENGINEER, CONTRACTOR and others as appropriate will be held. The purpose of this conference will be to discuss procedures for making submittals, processing applications for payment, and to establish other procedures and understandings bearing upon coordination and performance of the work.

CONTRACTOR shall submit the following documents at the Pre-construction Conference:

- Payment Bond as mentioned elsewhere herein
- Performance Bond as mentioned elsewhere herein
- Certification Letter as mentioned elsewhere herein
- Certificate of Insurance as mentioned elsewhere herein
- Specific Mix Design, Certification, and specification of material required to be submitted as mentioned elsewhere herein

CONTRACTOR shall not be allowed to proceed with any work until all the above-mentioned documents are submitted to the ENGINEER. Notice to proceed shall be issued as mentioned elsewhere herein and all work / calendars days shall be counted after issuance of Notice to Proceed. This time frame also includes review and approval of any mix design and certification required as mention elsewhere herein. ENGINEER shall have minimum of 72-hours for review and approval of any mix design submitted.

GP 22 SUPERVISION

The CONTRACTOR shall supervise and direct the work completely and efficiently devoting such attention thereto and applying such skills and expertise as may be necessary to perform the work in accordance with the Contract Documents.

GP 23 RESIDENT SUPERINTENDENT

The CONTRACTOR shall keep on the work site at all times during its progress, a competent resident superintendent, who shall not be replaced without written notice to the ENGINEER except under extraordinary circumstances. The superintendent will be the CONTRACTOR's representative at the site and shall have authority to act on behalf of the CONTRACTOR. All communications given to the superintendent shall be as binding as if given to the CONTRACTOR.

GP 24 NOTIFICATION OF WORK SCHEDULE

The CONTRACTOR shall provide a listing of the next work day's work activities by 12:00 p.m. of that day's work for the ENGINEER'S scheduling and inspection. All work scheduled for Monday shall be provided on Friday of the preceding week.

Failure to provide such notice within the specified time may result in the failure of the ENGINEER to pay for any material placed that day.

GP 25 PERMITS

All permits and licenses which may be required due to construction methods such as, but not limited to, borrow or disposal pits, steam crossings, causeways, work bridges, cofferdams, etc., but which are not part of the contract documents shall be procured by the CONTRACTOR prior to beginning the work which requires the permit.

All charges, fees, and taxes shall be paid, and all notices necessary and incidental to the due and lawful prosecution of the work shall be given.

GP 26 TRAFFIC CONTROL FOR CONSTRUCTION AND MAINTENANCE OPERATION

This work shall consist of furnishing, installing, and maintaining signs, barricades, temporary traffic control devices or adjustments, labor, materials, etc., necessary for the maintenance of traffic as called for within the Contract Documents, or as permitted by the ENGINEER and not specifically called out in the Itemized Proposal or specified within the Contract Documents as to the manner of payment, shall be included in the Lump Sum price for maintaining traffic as described within the Contract Documents and the applicable provisions of the Section 105.13 and 108.03 and as set out in the Itemized Proposal. Construction Warning Lights, Type "A" shall be placed on all barricades and Road Construction Ahead signs as per Section 801.14.

PRIOR TO CLOSING ROADS TO TRAFFIC

This work shall consist of CONTRACTOR notifying U.S. Post Office, affected schools, and all Emergency Response Agency's, which shall include but not limited to County Sheriff's, Local Police, and Hospitals, of the road closure. A list containing all notified agencies shall be furnished to the ENGINEER within 24 hours of the notification to these agencies. Road Closure signs (XG20-5) shall be in place a minimum of two weeks prior to the actual road closure or unless specifically stated in contract document. It shall be CONTRACTOR responsibility to notify the ENGINEER in writing of road closure minimum of three weeks in advance for its approval.

AFTER OPENING ROADS TO TRAFFIC

This work shall consist of CONTRACTOR notifying U.S. Post Office, affected schools, and all Emergency Response Agency's, which shall include but not limited to County Sheriff's, Local Police, and Hospitals, of the road opening. A list containing all notified agencies shall be furnished to the ENGINEER within 24 hours of the notification to these agencies. At any time, CONTRACTOR fails to open the roads or specific roads within the specified time frame as setout in the Contract Documents. Then CONTRACTOR shall pay liquidated damages as set forth elsewhere herein.

This cost shall include all labor, material, equipment, and supervision necessary to maintain Road Closure and Traffic Control for Construction and Maintenance Operation shall be included in the pay item identified as "Maintenance of Traffic", LSUM.

GP 27 PROJECT STAFFING

The CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the work and perform construction as required by the Contract Documents. The CONTRACTOR shall at all times maintain good discipline and order at the site.

GP 28 PROJECT RESPONSIBILITY

Unless otherwise specified in the Contract Documents, the CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, and sanitary facilities and all other facilities and incidentals necessary for the furnishing, performance, start-up, and completion of the work.

GP 29 NON-DISCRIMINATION

In compliance with the Acts of Indiana General Assembly, 1933, Chapter 270, the CONTRACTOR hereby agrees:

That with respect to hire, tenure, terms, conditions, or privileges of employment of employees for the performance of work, under this Contract, or any Subcontract herunder, no CONTRACTOR, Subcontractor, nor any person acting on behalf of such CONTRACTOR or Subcontractor shall, by reason of race, color, religion, sex, national origin, or ancestry discriminate against any citizen qualified to do work to which the employment relates;

That no CONTRACTOR, Subcontractor, nor any person on his behalf shall, in any manner, discriminates against or intimidate any employee hired for the performance or work under this Contract on account of race, color, religion, sex, national origin, or ancestry;

That this Contract may be canceled or terminated by the OWNER, and all money due or to become due herundermay be forfeited for a violation of the terms or conditions of this section of the Contract.

GP 30 CHANGES IN THE WORK

The OWNER, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the work, the Contract Sum being adjusted accordingly. All such work shall be executed under the conditions of the original contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change.

In giving instructions, the ENGINEER shall have authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, not extra work or change shall be made unless in pursuance of a written order from the OWNER signed or countersigned by the ENGINEER, or a written order from the ENGINEER stating that the OWNER has authorized the extra work or change, and no claim for an addition to the contract sum shall be valid unless so ordered. The value of any such extra work or change shall be determined in one or more of the following ways:

a) By estimate and acceptance in a lump sum
b) By unit prices name in the contract or subsequently agreed upon
c) By cost and percentage or by cost and a fixed fee

If none of the above methods is agreed upon, the CONTRACTOR provided he receives an order as above, shall proceed with the work. In such case and also under case (c), he shall keep and present in such form as the ENGINEER may direct, a correct amount of the cost, together with vouchers. In any case, the ENGINEER shall certify to the amount including reasonable allowance for overhead and profit, due to the CONTRACTOR. Pending final determination of value, payments on account of changes shall be made on the ENGINEER's certificate.

Should conditions encountered below the surface of the ground be a variance with the conditions indicated by the drawings and specifications, the contract sum shall be equitably adjusted upon claim by either party made within a reasonable time after the first observance of the conditions.

GP 31 DELETION OF WORK

The OWNER/ENGINEER has the right to delete any items that are a part of this contract.

GP 32 DELAY AND EXTENSION OF TIME

If the CONTRACTOR should be delayed at any time in the progress of the work by and act or neglect of the OWNER or the ENGINEER, or of any employee of either, or by any separate CONTRACTOR employed by the OWNER, or by changes ordered in the work, or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties or any causes beyond the CONTRACTOR'S control, or by delay authorized by the ENGINEER pending arbitration, or by any cause which the ENGINEER shall decide to justify the delay, then the time of completion shall be extended for such reasonable time as the ENGINEER may decide.

No such extension shall be made for delay occurring more than seven days before claim therefore is made in writing to the ENGINEER. In the case of continuing cause of delay, only one claim is necessary.

SPECIAL PROVISIONS INDEX

SPECIAL PROVISIONS

SP 1 CONTRACT TIME

The schedule for the completion of the work included in this contract including incidentals and clean up, shall be governed on a Calendar Completion Date Basis.

Completion of all the work included in this contract shall be completed prior to December 1, 2021. Incidental work can continue into next year but must be completed by May 1, 2022.

The earliest date to begin work shall be August 1, 2021. Eariler dates will be considered at CONTRACTOR'S request.

SP 2 ROAD CLOSURE

The CONTRACTOR shall limit the time that the road is closed to traffic to a maximum of 120 calendar days without written approval of an extension to this time from the OWNER.

The CONTRACTOR shall provide the OWNER at least three weeks notice prior to closing the road. In no case shall the road be closed without prior consent from the OWNER.

SP 3 PRIOR TO CLOSING ROADS TO TRAFFIC

The CONTRACTOR is to notify U.S. Post Office, rural fire departments, affected schools, local police agencies and Hamilton County Sheriff's Department, copy to ENGINEER. The XG20-5 Closure Signs are to be in place a minimum of two weeks prior to the actual closure.

SP 4 AFTER OPENING ROADS TO TRAFFIC

The CONTRACTOR is to notify the U.S. Post Office, rural fire departments, affected schools, local police agencies and Hamilton County Sheriff's Department, copy to ENGINEER.

SP 5 HOLIDAYS THAT WORK IS NOT PERMITTED

The CONTRACTOR may not perform work on this project as mentioned in the most recent INDOT Standard Specifications and including on the following days:

- All Saturday

At the discretion of the ENGINEER, CONTRACTOR shall be allowed to work on Saturday and Sunday, only if, CONTRACTOR submits in writing 72-hours in advance to the ENGINEER or specifically stated in the contract documents mentioned elsewhere herein.

SP 6 NOTICE TO PROCEED

The CONTRACTOR shall start to perform the work on the date designated in the written Notice to Proceed, but no work shall be done at the site prior to the date of the Notice to Proceed. Notice to Proceed will be issued by July 1,2021.

SP 7 EXISTING CONDITIONS

The CONTRACTOR shall verify the elevation and measurements of all points where new construction is to match existing conditions prior to the commencement of any construction activities.

Where new work is to be filled to old work, the CONTRACTOR shall check all dimensions and condition in the field and report any errors or discrepancies to the ENGINEER or assume responsibility for their correctness and the fit of new parts to old. If such parts do not fit properly, CONTRACTOR shall make at CONTRACTOR'S expense such alternations to new parts as may be necessary to assure proper fits and connection, which meet the approval of the ENGINEER.

No direct payment shall be made for this work but the cost thereof shall be included in the costs of other items of the contract.

SP 8 DISPOSAL OF EXCESS MATERIAL

All excess material not to be salvaged (waste) shall be removed from the project site. Whether a private or public waste site is utilized, such disposal shall comply with all Federal, State and local ordinances and permit requirements.

No direct payment will be made for this work but the cost thereof shall be included in the costs of the other items of the contract.

SP 9 TESTING OF MATERIALS

The CONTRACTOR shall be responsible for all testing and sampling of materials as hereinafter specified. The CONTRACTOR shall furnish certified tests for the following materials, which are to be made by an independent laboratory approved by the ENGINEER. The independent laboratory shall submit copies of all test results directly to the ENGINEER. Testing performed by an agent of a material producer or supplier will not be considered independent. The cost of providing samples and testing will not be paid for directly but will be included in the cost of other items.

CONCRETE
Advance Concrete Tests: Concrete tests shall be conducted in accordance with A.S.T.M. Serial Des. C-39, for compliance with the requirements of these specifications.

Slump: For each 25 cubic yards or fraction thereof taken from forms.

Compression: The CONTRACTOR shall have tests made at a testing laboratory that is approved by the ENGINEER. The CONTRACTOR shall furnish to the ENGINEER all equipment and facilities necessary to prepare concrete test specimens. Three test cylinders 6" in diameter and 12" high will be made for each 100 cubic yards of each class of concrete or fraction thereof, placed each day. The CONTRACTOR shall properly crate and transport the cylinder test specimens to the approved laboratory.

The minimum compressive strength at 28 days shall be:

Class "A" Concrete, 3500 P.S.I.
Class "B" Concrete, 3000 P.S.I.
Class "C" Concrete, 4000 P.S.I.

One of the three test specimens shall be tested at 7 days and the remaining two specimens shall be tested at 28 days.

Concrete test specifications shall be in accordance with AASHTO Des. T-23; cylinder specimens shall be tested in accordance with ASSHTO T-22, and test beams shall be treated in accordance with AASHTO Des. T-97.

If the CONTRACTOR desires to remove forms sooner than as specified in Article 702.13, he shall make 6x6x36 test beams to provide information for stripping forms. Equipment for testing these beams shall be furnished by the CONTRACTOR.

BITUMINOUS MATERIAL
The CONTRACTOR shall provide proof that all bituminous material used shall be of State tested material and on immediate usage basis. Class D certification required.

BORROW
The CONTRACTOR shall determine the location of the borrow pit and shall have laboratory density tests made as prescribed in Section 203.24 and outlined in AASHTO T-99. The subgrade shall be constructed in accordance with Section 207. No direct payment will be made for subgrade treatment. The cost of all work and testing for subgrade treatment shall be included in other items of the contract. Frequency of the density testing shall be every 100 ft for each lane of pavement per lift. Density testing for shoulder width greater than 6 feet shall be every 300 feet per lift.

FOUNDATION
The CONTRACTOR shall verify soil bearing capacity meet or exceed the design capacity at each wingwall and main footing. ENGINEER shall determine the location of each test.

REINFORCING STEEL
The CONTRACTOR shall furnish the ENGINEER with two (2) copies of certified mill test reports. Reinforcing steel shall comply with the requirements set out in Article 910.01. Grade 60 steel shall be used.

SP 10 GEOTECHNICAL INVESTIGATION

A Geotechnical investigation for this project site has been performed by Geotill Engineering, INC., Fishers, Indiana. This report presents the soil evaluation, Geotechnical recommendations and construction considerations for this project. Copies of the report can be found in Appendix B.

SP 12 UTILITY INFORMATION

All applicable sections for 105.06 and 107.20 shall apply except as amended elsewhere within the contract documents and as follows:

The utilities are beyond the control of the OWNER. Coordination with any applicable utility(s) is the sole responsibility of the CONTRACTOR. The CONTRACTOR shall identify and contact the affected utilities prior to the commencement of any activities.

The following is provided for information purposes only. The CONTRACTOR shall contact the following personnel or company to coordinate work prior to the commencement of any construction activities.

Utility Information	Contact	Telephone
Duke Energy	Bill Ferrell	(317) 776-5351
Centurylink	Melissa Teague	(317) 656-4663

SP 13 COOPERATION WITH PUBLIC UTILITIES

The CONTRACTOR shall notify any utility which might have facilities in the way of the construction two weeks prior to beginning work.

The CONTRACTOR's attention is directed to Section 107.20 regarding his responsibility for Utility Properties and Service. No work is to commence until all utility owners have been contacted and the exact location and depth of existing lines has been established and the necessary arrangements for the protection thereof have been made. All work to be performed adjacent to existing lines shall be done in the presence of utility personnel, unless permission is otherwise granted from the particular owner involved.

SP 14 PROTECTION OF PROPERTY

The CONTRACTOR'S attention is directed to Section 108.04 with regard to prosecution of work. Pollutants such as fuels, lubricants, bitumen, raw sewage and other harmful materials (including residual materials from scarifying bridge decks and approaches, sandblasting and cleaning operations, and materials from full and partial depth bridge deck patching) shall not be discharged into or near rivers, streams and impoundments or into natural or man-made channels leading thereto.

SP 15 LIQUIDATED DAMAGES

Damages set out below are not meant to penalize the CONTRACTOR, but to insure timely completion of this contract. It is the sole responsibility of the CONTRACTOR to thoroughly familiarize himself with these contract documents.

The CONTRACTOR shall pay One Thousand Dollars ($1,000.00) for each calendar day after the permitted contract time has expired as setout elsewhere herein for failure to complete the work in accordance with this contract.

The CONTRACTOR shall also pay One Thousand Dollars ($1,000.00) for each calendar day after the permitted 120 calendar days that each road is closed to traffic.

The CONTRACTOR shall pay One Thousand Dollars ($1,000.00) for each calendar /or portion thereof for failure to complete specific time sensitive operation, mentioned elsewhere herein, within the time frame allowed.

If the CONTRACTOR exceeds any or all allotted time periods simultaneously, the assessed damages will be cumulative.

SP 16 DECREASED OR INCREASED QUANTITIES OF WORK

These Special Provisions shall not be considered as a waiver of, nor shall they invalidate the right of the ENGINEER to increase or decrease quantities of work.

SP 17 PARTIAL PAYMENTS

Partial payments will be made once each month as the work progresses. Said payments will be based upon estimates prepared by the CONTRACTOR using the provided HCHD FORM 8049 and a County Claim Voucher and approved by the ENGINEER for the value of the work performed and materials complete in place in accordance with the contract, plans and specification. No partial payment will be made when the amount due the CONTRACTOR since the last estimate amounts to less than Five Hundred Dollars. From the total of the amount determined to be payable on a partial payment, ten percent of such total amount will be deducted and retained by the County until the final completion and acceptance of the work.

SP 18 FINAL PAYMENT

When the contract work has been completed in an acceptable manner in accordance with the terms of the contract, the CONTRACTOR will prepare a final estimate for the work and will furnish the ENGINEER with a copy thereof. Before final payment of the contract, the CONTRACTOR shall furnish the provided Affidavit and Waiver of Lien from all subcontractors, material suppliers and equipment suppliers who provided goods and/or services valued at $500.00 or greater. Final payment will not be made until a final inspection has been made, the work has been accepted by the County and has met the requirements of Section 109.08 of the Indiana Department of Transportation Standard Specifications. The ENGINEER, acting for the Board of County Commissioners, will then certify to the County Auditor the balance due the CONTRACTOR, and said certificate will be deemed an acceptance of the completed contract by the OWNER.

SP 19 CLEARING RIGHT-OF-WAY

Initial tree clearing has been performed in advance of the contract letting. The CONTRACTOR shall clear the remaining right-of-way as necessary for construction in accordance with Section 201 and 621. Stumps remaining from the initial tree clearing that are outside project limits shall be removed at the direction of the ENGINEER. Clearing shall take place within project limits from right-of-way to right-of-way.

All labor, material, seeding, removal of trees and stumps, and equipment necessary to clear right of way and to dispose of the material in a suitable manner shall be included in the pay items for “Clearing Right of Way”, LSUM.

SP 20 CHANNEL CLEARING SMALL STRUCTURE #23017

This work shall consist of but not limited to clearing channel to the existing flow line elevation (identify in the general plan view of the plans), removal of debris, vegetation, and various other material that is impeding the flow of the stream, or infringing onto the bridge roadway, from the channel, spill slopes, and bridge cones, as indicated in the detail drawing and/or as direct by the ENGINEER for Small Structure #23017 in accordance with Section 201. All suitable material removed from the stream, approved by the ENGINEER, shall be reused on the slope wall to acquire 2:1 slope.

All labor, material, equipment, disposal of material in a suitable manner, and other necessary work required for clearing the channel to existing flow line elevation shall be included in the pay item for “Clearing Right of Way”, LSUM.

SP 21 FIELD TILE (UNDISTRIBUTED)

Field tiles encountered and affected by the scope of work specified within the contract documents shall be given positive outlet.

This work shall consist of the extension and repair of existing field tiles as necessary to keep tile in service.

Material and construction requirements shall be in accordance with 715 and 719 of the standard specifications.

Pipe will be measured per linear foot of new field tile in place as approved by the ENGINEER. The accepted quantities of pipe will be paid for at the contract unit price per foot for “Pipe, Type 4, Circular, ____in., Undistributed” as listed in the Itemized Proposal. The costs of excavating, backfilling, disposal, planking removal of portions of existing tile, tees, elbows and necessary incidentals shall be included in the cost of work.

SP 22 PROTECTION OF FIELD TILE

All field tiles encountered and affected by the scope of work specified within the contract documents shall be given a positive outlet. Animal guards are required on the ends of all field tiles. The cost of all animal guards shall be included in the cost of the pipe.

Any tile outside the construction limits damaged by the CONTRACTOR's operations shall be replaced by the CONTRACTOR at his own expense.

SP 23 PRESENT STRUCTURE, REMOVE

This work shall consist of removing Small Structure #23017 (191st Street Over Unnamed Tributary of Stony Creek) as indicated in the detail drawing and in accordance in Section 202 of the Standard Specification.

All labor, material, surface milling of asphalt, equipment, supervision and other related work required to complete this work shall be included in the pay item identified as "Present Structure, Remove", LSUM.

SP 24 EXCAVATION, DRIVEWAY

Excavation and/or borrow required for driveway construction shall be included in the cost of other items.

SP 25 EMBANKMENT OVER EXISTING ROADBEDS

Placement of new embankment over the existing roadbed shall not be permitted. The existing pavement shall be removed entirely, or milled full-depth, spread and re-compacted prior to any fill being placed in the roadbed. The cost of removal of the existing pavement is included in the pay item "Excavation, Common".

SP 26 HMA PAVEMENT

HMA mainline pavement and shoulder courses shall follow 2020 INDOT Standard Specification Section 402.

SP 27 GUARDRAIL END TREATMENT, TYPE OS (31")

This work shall consist of installation of 'Guardrail End Treatment, Type OS (31")' as indicated in the detail drawing and in accordance with these specification and Section 601.00 of the Standard Specification.

Guardrail end treatments shall be required to terminate guardrail installation at the locations shown on the plans for Small Structure 23017. Each unit shall be installed in accordance with the manufacturer's recommendation except for the end treatment **shall not be anchored in concrete**.

All labor, material, equipment, supervision and other related work required to complete this work shall be included in the pay item identified as 'Guardrail End Treatment, Type OS (31")', Each.

SP 28 SEEDING

If the seeding is placed outside the seasonal limitation requirement per INDOT Specification, then warranty Bond shall include all operations necessary for re-installation, including re-installation of erosion control blankets as specified on the plans.

SP 29 SEEDING OUTSIDE CONSTRUCTION LIMITS

Area which have been disturbed by construction and are outside the construction limits shall be seeded with seed mixture grass type 2 in accordance with 621.06(g) 2, or seed mixture legume type 2 in accordance with 621.06(h) 2, as directed.

No payment will be made for seeding required in areas outside the construction limits, which have been disturbed by construction.

SP 30 DETOUR ROUTE MARKER ASSEMBLY

This work shall consist of installation of Detour Route Marker Assembly, as indicated in the detail drawing, and in accordance with Section 801.05 of the Standard Specification.

CONTRACTOR shall be required to post detour sign (XM4-8), arrow marker (M6-1), and other necessary marker required or directed by the ENGINEER. All labor, material, equipment, maintenance, and supervision required to complete this work shall be included in the pay item identified as "Detour Route Marker Assembly", EACH.

SP 31 ROAD CLOSURE SIGN ASSEMBLY

This work shall consist of installation of Road Closure Sign Assembly shall be used with Barricades as indicated on the plans and Type A Warning Lights, as indicated in the detail drawing and in accordance with Section 801.06, 801.07, and 801.14 of the Standard Specification.

All labor, material, equipment, maintenance, and supervision required to complete this work shall be included in the pay item identified as "Road Closure Sign Assembly", EACH.

SP 32 ADJUSTMENT OF SECTION CORNER MONUMENT

CONTRACTOR shall notify Hamilton County Surveyor's office 3 days in advance of commencing any work for adjustment of the section corner monument 500 located at Station 14+93.43 Line "PR-A" 0.540' RT. Contact Hamilton County Surveyor's office at 317-776-8495 or at surveyor@hamiltoncounty.in.gov.

All labor, material, equipment, maintenance, and supervision required to complete this work shall be included in the pay item identified as "Monument Section Corner", EACH.

SP 33 BENCHMARK

The CONTRACTOR shall install a USGS benchmark at Small Structure #23017. This work is to be done in accordance with Section 105.08 and Section 615 of the Standard Specifications. The CONTRACTOR shall coordinate with the Hamilton County Surveyor's Office (HCSO) for the location of the benchmark.

The HCSO will provide the CONTRACTOR with the new monument to be installed. In addition, the CONTRACTOR shall notify the HCSO 30 days prior to construction so that the necessary steps to offset an elevation may be taken. The CONTRACTOR shall submit to the HCSO (copy to ENGINEER) a letter from a Licensed Surveyor certifying this elevation.

The cost of all labor, materials and equipment necessary to complete this work shall be included in the cost of other items.

SP 34 IDEM NOTIFICATION FOR STRUCTURE REMOVAL

A bridge asbestos survey was performed by DLZ Indiana, LLC. The Bridge Asbestos Survey Summary and IDEM Notification of Demolition are included in the contract documents in Appwndix C for use by the CONTRACTOR. The CONTRACTOR shall complete the Notification of Demolition form and submit it to the Indiana Department of Environmental Management.

SP 35 PERMITS

Copies of all permits obtained for IDEM Rule 5 have been submitted and granted. IDEM has approved the NOI under IDEM ID Number: INRA06211. Copies of the approved permits are included as a part of the contract documents in Appendix D. According to the requirements of the governing agencies, the authorizations must be conspicuously displayed at the project site and the CONTRACTOR shall perform his work in accordance with the conditions contained in all permits.

Copies of all permits obtained by an IDEM 401/404 Regional General Permit have been submitted and granted. IDEM has approved the 401 Permit under IDEM ID Number: 2020-786-29-ALF-X. The US Army Corps of Engineers has approved the 404 Permit under the authorization: LRL-2020-727-sjk. Copies of the approved permits are included as a part of the contract documents in Appendix D. According to the requirements of the governing agencies, the authorizations must be conspicuously displayed at the project site and the CONTRACTOR shall perform his work in accordance with the conditions contained in all permits.

All permits and licenses which may be required due to construction methods such as, but not limited to, borrow or disposal pits, steam crossings, causeways, work bridges, cofferdams, etc., but which are not part of the contract documents shall be procured by the CONTRACTOR prior to beginning the work which requires the permit.

All charges, fees, and taxes shall be paid, and all notices necessary and incidental to the due and lawful prosecution of the work shall be given.

SP 36 OPEN BURNING OF NATURAL GROWTH

Open burning of natural growth will not be permitted on this contract.

SP 37 TREE AND LAWN PROTECTION

When constructing private drives, the CONTRACTOR shall use reasonable care for the protection of trees, shrubbery, fences, and lawn areas beyond the permanent right-of-way.

The cost of the protection or trimming and proper restoration of disturbed areas shall not be paid for directly but shall be included in the cost of “Clearing Right-of-Way.”

SP 38 RESTORATION OF DISTURBED AREAS

Cavities formed by the removal of shrubs, trees and/or stumps and located outside of proposed pavement areas shall be backfilled and compacted with “B” Borrow. Such compaction shall comply with Section 211.04. The top six (6) inches of the backfilled area shall be topsoil in accordance with Section 914.01.

Any roots remaining after all the removal of any designated item shall be removed to a depth of 6 inches below the surface of the surrounding ground area. The final preparation of these areas shall be in accordance with Section 621.

No direct payment shall be made for this work but shall be included in the cost of other items.

SP 39 STRUCTURE BACKFILL

DESCRIPTION

This work consists of the placement of structure backfill behind the structure and behind the wingwalls. The material to be used as structure backfill shall be No. 8 Stone in accordance with 904.05.

METHOD OF MEASUREMENT

Structure backfill will be measured by the cubic yard in accordance with the neat lines shown on the plans or as directed.

BASIS OF PAYMENT

The cost for delivery, placement, compaction, and all other necessary items associated with structure backfill shall be included in the cost of the Structural backfill pay item. Payment for structure backfill will be paid for at the contract unit price.

SP 40 EROSION CONTROL

The CONTRACTOR shall note that this project disturbs more than one acre of total land area and therefore falls within the Indiana Department of Environmental Management's (IDEM) Rule 5 Permit requirements. It is the CONTRACTOR'S responsibility to follow the requirements of this Rule 5 Permit.

The Soil Erosion Control Plans have been previously submitted to the Hamilton County Soil and Water Conservation District for their review and concurrence. A Notice of Intent (NOI) has been submitted to the Indiana Department of Environmental Management (IDEM). The CONTRACTOR shall be responsible for obtaining all authorized signatures from the County meeting the requirements of 327 IAC 15-5 for submission of the Notice of Termination (NOT). Upon completion of the construction work and final acceptance by the OWNER, the CONTRACTOR shall submit the NOT to the IDEM.

The cost of all items necessary to submit and comply with the requirements of the Rule 5 Permit shall not be paid for separately, but shall be included in the cost of other items.

REQUIREMENTS

The CONTRACTOR is responsible to implement and inspect all erosion control measures and practices in accordance with the plans, applicable requirements of 327 IAC 15-5-7 and 15-5-9, and erosion control guidelines of this specification. The erosion control measures and practices shall be implemented and inspected by personnel trained in erosion control practices provided by the CONTRACTOR. It shall be the sole responsibility of the CONTRACTOR to pay all fines incurred due to nonconformance with practices required herein.

Prior to any construction activity, the CONTRACTOR shall submit for review the sequence of the installation of the erosion control practices to the local soil and water conservation district (Ginger Davis Hamilton County Soil & Water Conservation District, 1717 Pleasant Street, Suite 100, Noblesville, IN 46060). This sequence shall be written in a format that describes the order of construction activities from station to station. The CONTRACTOR shall not begin any construction activity before the Hamilton County Soil & Water Conservation District has reviewed and approved the erosion control sequence.

The CONTRACTOR shall also submit to the Hamilton County Soil & Water Conservation District a spill prevention plan that will address how the CONTRACTOR will minimize the potential for spills, how the CONTRACTOR will provide for containment and an action plan in the event of a spill. The CONTRACTOR shall not begin any

construction activity before the Hamilton County Soil & Water Conservation District has reviewed and approved the spill prevention plan.

The CONTRACTOR shall follow the INDOT Standard specifications and provisions for the placement of Erosion Control Measures and for the construction procedure. No work in flowing water will be allowed. Cofferdams or stream diversion shall be used to prevent construction in flowing water. All disturbed stream banks need to be stabilized with appropriate armor or soft measures and stream flow should not occur on unstabilized or disturbed stream banks.

EROSION CONTROL GUIDELINES

1. Install all perimeter erosion control prior to any earth disturbing activity or the removal of any original vegetation.
2. Cut and seed side ditches and install erosion control blankets and install riprap ditch checks prior to mass grading operations.
3. All erosion control measures shall remain functioning until areas being controlled are either paved or seeded, as shown on plans.
4. Within 5 days after the drainage structures are in place, the riprap shall be installed.
5. All maintenance of erosion control measures shall be in conformance with the *Indiana Stormwater Quality Manual.* A copy of the *Indiana Stormwater Quality Manual* will be maintained at the Hamilton County Highway Department at all times.
6. All erosion control measures shall be inspected and a written report completed, that notes site deficiencies and corrective actions to be taken, after each 0.5" storm event as well as on a weekly basis, as a minimum or as directed by the ENGINEER.
7. The CONTRACTOR shall utilize as an interim measure, temporary seeding for any areas to be dormant for 15 days or more.
8. Permanent stabilization of all disturbed areas shall be installed within 15 days of the final grading of these areas. This includes all permanent seeding as shown in the plans.
9. All disturbed areas (i.e. stockpile/borrow) outside the project limits will be subject to applicable erosion control standards and should be in accordance with INDOT Standard Specifications and applicable Rule 5 requirements. An erosion control plan that meets the requirements of Rule 5 shall be submitted to (Ginger Davis, Hamilton County Soil & Water Conservation District, 1717 Pleasant Street, Suite 100, Noblesville, IN 46060).
10. During periods in which borrow material will be brought into the site or the excavated material being hauled off from the project site, all the roadway effected shall be cleaned daily. Dirt clods or stone deposited on public roadways shall be cleaned immediately. The CONTRACTOR shall use additional stone or wheel washers to prevent excess tracking onto public roads.
11. Any earthwork not shown on this plan will require a revised storm water pollution prevention plan.
12. Dewatering operations that pump sediment laden water will require a sediment bag to minimize the discharge of polluted water.

METHOD OF MEASUREMENT

All Temporary Erosion and Sediment Control will be measured in accordance with 205 unless noted otherwise.

BASIS OF PAYMENT

All Temporary Erosion and Sediment Control pay items will be paid for in accordance with 205. The cost of all items necessary to submit and comply with the requirements of the Temporary and Sediment Control requirements as indicated on the Contract Plans shall not be paid for separately, but shall be included in the cost of other items.

SP 41 R/W MARKERS

All new R/W markers placed along the proposed R/W line shall be placed flush with the ground.

SP 42 UNDISTRIBUTED QUANTITIES

As discussed in the Geotechnical report, undistributed quantities for Common Excavation, Compacted Aggregate, No. 5, and Geotextile for Subgrade, Type 2B have been included in the contract for undercutting and replacement of unsuitable soil. Undistributed quantity of Compacted Aggregate, No. 53 has been included for unsuitable soil under structure footings. Refer to Geotechnical report included in Appendix B for additional information.

Following undistributed quantities have been included in the Contract:

Pay Item	Unit Symbol	Quantity
Excavation, Common.	CYS	40
Compacted Aggregate, No. 5	CYS	40
Geotextile for Subgrade, Type 2B	SYS	159
Compacted Aggregate, No. 53	CYS	14

SP 43 PUMP-AROUND

DESCRIPTION:
This work shall consist of furnishing, installing, and maintaining a pump-around in accordance with 105.03 to sufficient scope, size, and capacity to prevent stream flow into construction work areas as necessary to construct the structure and perform channel work.

The pump around dikes shall be constructed of non-erodible materials. Sandbag dikes shall be covered with impervious plastic sheeting and shall be placed on the open channel side of the dikes. Sheet piling shall be watertight. Pump around and dewatering hoses shall be made of impervious material.

MATERIALS:
Materials shall be in accordance with 205.02.

CONSTRUCTION REQUIREMENTS:
The CONTRACTOR may use an alternate method for the channel work as shown on the plans, pending the approval of the ENGINEER. If an alternate method is proposed, the CONTRACTOR shall make the appropriate permit application or amendment.

Traversing the channel reach with equipment within the work area where no work is proposed shall be avoided. If equipment is required to traverse such a reach for access to another area, timber mats or similar measures shall be used to minimize disturbance to the channel. A temporary channel crossing shall be used only when necessary and as approved by the ENGINEER.

The erosion and sediment control measures adjacent to the channel area shall be installed before construction on the pump-around can begin. All work shall stay within the construction limits. Disturbance within that area shall be minimized.

Work shall not be conducted during rain events.

PUMP-AROUND:
The pump-around shall be in accordance with the following:

Dewatering of the channel shall be performed by using a mechanical pump. The intake suction hose shall be floated as long as possible to prevent the pump from pulling sediment from the bottom of the pooled area.

Sandbag dikes shall be installed at the upstream and downstream ends of the work area as shown in the details, and the channel flow shall be pumped around the work area. The pump shall discharge onto a stable velocity dissipater

consisting of riprap or sandbags or other medium as approved by the ENGINEER. The upstream intake hose shall be fitted with a woven wire mesh screen for fish protection. The mesh opening for fish screens shall not exceed 0.094 in.

MAINTENANCE AND INSPECTION:
The diversion measures shall be inspected within 24 h of each rainfall event and at least once every seven calendar days. The sediment and debris from the channel or upstream clean water dike shall be removed. The dikes shall be repaired as needed. All outlets shall be checked and repaired as needed to prevent washouts.

REMOVAL:
Pump-around shall be removed after construction in the main channel is complete and permanent erosion control features have been established. Any area disturbed by the pump-around measures shall be returned to its original condition and re-vegetated as needed.

METHOD OF MEASUREMENT:
Pump-around will not be measured, regardless of how many times the system is moved, replaced or relocated.

BASIS OF PAYMENT:
Pump-around will be paid for at the contract unit price per Each.

The cost of furnishing all materials, equipment, labor, installation, maintenance, and removal required for dewatering and operation of the temporary pump-around shall be included in the cost of Pump Around.

SP 44 DEWATERING PLAN

The CONTRACTOR shall submit in writing a dewatering plan for the bridge installations prior to the beginning of work. The plan shall include a sketch showing the proposed location of any temporary pipes, causeways, sumps, etc. as well as text describing the method of handling both low-flow and high-flow conditions. The dewatering plan shall meet all OSHA requirements for safety at all times. Damming of the waterway without a provision for continuous flow in the case of pump failure will not be allowed.

If permits beyond those obtained in advance by the OWNER are required due to the method of dewatering, the CONTRACTOR shall obtain the necessary permits and provide copies of the permit applications and approvals to the ENGINEER. No work in the channel shall proceed until the CONTRACTOR has obtained the necessary permits, and has been directed to proceed by the ENGINEER.

All costs related to dewatering shall be included in the cost of other items.

SP 45 DEWATERING

DESCRIPTION:
The CONTRACTOR shall design, furnish, install, test, operate, monitor, and maintain a dewatering system of sufficient scope, size, and capacity to prevent groundwater flow into excavations and allow water and construction operations to proceed on dry, stable subgrades.

MATERIALS:
Materials shall be in accordance with the following requirements.

Sediment filter bags shall consist of nonwoven, needle punched polypropylene geotextile consisting of strong, rot resistant, chemically stable long-chain synthetic polymer materials which are dimensionally stable relative to each other including the selvedges. The plastic yarn or fibers used in the geotextile shall consist of at least 85% by weight of polyolefins, polyesters, or polyamides. The plastic yarn or fibers shall have stabilizers and inhibitors added to the base plastic to make the filaments resistant to deterioration due to ultraviolet and heat exposure.

The geotextile shall be in accordance with the physical requirements as follows:

PROPERTY	TEST METHOD	REQUIREMENTS*
Tensile Strength	Grab Tensile Strength, ASTM D 4632	200 lb
Elongation	Grab Tensile Strength, ASTM D 4632	15%
Mullen Burst	ASTM D 3786	350 psi
Seam Strength	Grab Tensile Strength, ASTM D 4632	180 lb
Puncture Strength	ASTM D 4833	110 lb
Trapezoid Tear	ASTM C 4533	80 lb
Ultraviolet Degradation at 150 h	ASTM D 4355	70% strength retained
Apparent Opening Size, AOS	ASTM D 4751	No. 80 standard sieve or filter
Flow Rate	ASTM D 4491	80 gal./min/sq ft
* The value in the weaker principal direction shall be used. All numerical values represent minimum average roll value and test results from any sampled roll in a lot shall meet or exceed the minimum values in the table. Lots shall be sampled according to ASTM D 4354.		

The size of the filter bag shall be appropriate for the site conditions.

CONSTRUCTION REQUIREMENTS:
Dewatering operations shall be maintained to ensure stability of excavations and constructed slopes and that the excavation does not flood. Surface water shall be prevented from entering excavations by grading, dikes, or other means. Water from work area dewatering pumps shall be discharged through a sediment filter bag, or other approved device. The filter bag shall be located such that discharge water flows back into a stabilized area downstream of the work area. Dewatering shall be accomplished without damaging existing buildings or structures adjacent to excavation. The dewatering system shall be removed when no longer needed.

The CONTRACTOR shall comply with water disposal requirements of authorities having jurisdiction.

The operation of the dewatering pumps and the condition and efficiency of the sediment filter bags shall be closely monitored. Sediment filter bags which do not perform properly or reach their capacity shall be replaced immediately.

The CONTRACTOR shall dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Disposal of water shall not inconvenience others. Sumps, sedimentation tanks, flow-control devices, and temporary sediment and erosion control shall be provided in accordance with 205 and as required by authorities having jurisdiction. Sediment in filter bags shall be removed once it has accumulated to the design volume and be disposed of in accordance with 202.

METHOD OF MEASUREMENT:
Dewatering will not be measured, regardless of how many times the system is moved, replaced or relocated. Sediment filter bags will not be measured regardless of the number of times a day a filter bag may become filled and replaced.

BASIS OF PAYMENT:
Dewatering shall be considered incidental to the work being performed and shall be included in the cost of other items.

The cost of the pump, materials, installation, inspection, maintenance, sediment filter bags, filter stone, secondary containment, removal and proper disposal, and all necessary incidentals shall be included in the cost of other items.

APPENDIX A

List of Standard Drawings

HAMILTON COUNTY SS# 23017
STANDARD DRAWINGS INDEX

SEC.	CODE	PAGE	DRAWING SUBJECT	DRAWING CONTENTS	PUB DATE
105	RBCL	01	Road & Bridge Contract Limits	Road & Bridge Contract Limits	9/1/2019
205	TECD	04	Temporary Erosion Control	Temporary Inlet Protection, Filter Bag Insert	9/1/2019
205	TECD	06	Temporary Erosion Control	Temporary Check Dam, Revetment Riprap	9/1/2019
205	TECD	11	Temporary Erosion Control	Perimeter Protection, Silt Fence	9/1/2019
205	TECD	12	Temporary Erosion Control	Temporary Erosion Control Perimeter Construction Entrance	9/1/2019
211	BFIL	01	Bridge Fill	Part Plan for Flared Wings	9/1/2019
211	BFIL	02	Bridge Fill	Flared Wings Typical Cross Section	9/1/2019
211	BFIL	03	Bridge Fill	Backfill Placement at Interior Support	9/4/2012
211	BFIL	04	Bridge Fill	Backfill Placement at End Bent, Beam Structure	9/4/2012
211	BFIL	05	Bridge Fill	Backfill Placement at End Bent, Slab Structure	9/4/2012
601	CWGT	01	Curved W-Beam Guardrail Terminal	Curved W-Beam Guardrail Terminal System	9/2/2003
601	CWGT	02	Curved W-Beam Guardrail Terminal	Curved W-Beam Guardrail Terminal System	3/1/2004
601	GRET	06	Guardrail End Treatment	Grading at Guardrail End Treatments	3/1/2004
601	GRET	07	Guardrail End Treatment	Grading at Guardrail End Treatments	3/1/2005
601	GRET	08	Guardrail End Treatment	Grading at Guardrail End Treatments	9/3/2002
601	MGSA	02	Midwest Guardrail Sytem Assembly	Midwest Guardrail Sytem Assembly	9/1/2018
601	MGSA	04	Midwest Guardrail Sytem Assembly	Midwest Guardrail Sytem Assembly	9/1/2018
601	MGSA	05	Midwest Guardrail Sytem Assembly	Midwest Guardrail Sytem Assembly	9/1/2019
601	MGSA	16	Midwest Guardrail Sytem Assembly	Midwest Guardrail Sytem Assembly, Guardrail Height Transition	9/1/2018
610	DRIV	03	Drives	Class II Drive (Residential)	9/1/2020
610	DRIV	06	Drives	Class V Drive (Field Entrance)	9/1/2019
610	DRIV	10	Drives	Class II and Class IV Drive Sections	9/1/2019
610	DRIV	11	Drives	Class II, IV & V Drives Approach Grades	9/1/2019
611	MBAS	01	Mailbox Assembly	Single Mailbox Assembly	3/1/2005
611	MBAS	03	Mailbox Assembly	Mailbox Support Hardware	9/1/2019
611	MBAS	04	Mailbox Assembly	Elevation Views	3/1/2005
615	RWPB	01	Right-of-Way Parking Barrier	Right-of-Way Marker/Concrete Parking Barrier	3/1/2004
615	SLBM	01	Survey Line Bench Mark	Bench Mark Post	9/1/1997
615	SLMN	01	Survey Line Monument	Survey Line Monuments	9/1/1997
715	BKFL	01	Pipe Backfill	Method 1, New Roadway, Trench	9/2/2008
715	BKFL	02	Pipe Backfill	Method 1, New Roadway, Embankment	9/2/2008
717	PHCL	01	Pipe Height of Cover Limits	Pipe Height of Cover Limits	1/2/1998
717	PHCL	02	Pipe Height of Cover Limits	Pipe Height of Cover Limits	1/2/1998
717	PHCL	03	Pipe Height of Cover Limits	Pipe Height of Cover Limits	1/2/1998
717	PHCL	04	Pipe Height of Cover Limits	Pipe Height of Cover Limits	1/2/1998
717	PHCL	05	Pipe Height of Cover Limits	Pipe Height of Cover Limits	1/2/1998
717	PHCL	06	Pipe Height of Cover Limits	Pipe Height of Cover Limits	1/2/1998
717	PHCL	07	Pipe Height of Cover Limits	Pipe Height of Cover Limits	1/2/1998
717	PHCL	08	Pipe Height of Cover Limits	Pipe Height of Cover Limits	1/2/1998
717	PHCL	09	Pipe Height of Cover Limits	Pipe Height of Cover Limits	1/2/1998
717	PHCL	10	Pipe Height of Cover Limits	Pipe Height of Cover Limits	1/2/1998
720	INST	04	Inlet Structure	Inlets Type E & F	9/1/1997
723	CCSP	01	Concrete Culvert Scour Protection	Three-Sided Concrete Culvert Scour Protection, Plan, 10'-0" ≤ Span Width < 20'-0"	9/1/2011
723	CCSP	02	Concrete Culvert Scour Protection	Three-Sided Concrete Culvert Scour Protection, Section, 10'-0" ≤ Span Width < 20'-0"	9/1/2011
801	TCDT	01	Traffic Control Detour	Rural Detour	9/1/2017
801	TCDT	04	Traffic Control Detour	Detour Route Marker Assemblies	9/1/2017
801	TCDV	04	Traffic Control Devices	Type III Barricade	9/1/2016
801	TCDV	05	Traffic Control Devices	Typical Construction Sign Mounting	9/1/2016
801	TCDV	06	Traffic Control Devices	Type III Barricade Application for Road Closure for Thru Traffic	9/1/2016
801	TCDV	07	Traffic Control Devices	Type III Barricade Application for Road Closure to All Traffic	9/1/2016
801	TCSN	01	Traffic Control Signs	Traffic Control Signs Index Sheet	9/1/2016
801	TCSN	02	Traffic Control Signs	Traffic Control Signs	9/1/2016
801	TCSN	03	Traffic Control Signs	Traffic Control Signs	9/1/2016
801	TCSN	04	Traffic Control Signs	Traffic Control Sign Design Details	9/1/2018
801	TCSN	05	Traffic Control Signs	Traffic Control Sign Design Details	9/1/2016
801	TCSN	06	Traffic Control Signs	Traffic Control Sign Design Details	9/1/2016
801	TCSN	07	Traffic Control Signs	Temporary Panel Sign Breakaway Post	9/1/2016

APPENDIX B

Geotechnical Report

GEOTECHNICAL ENGINEERING INVESTIGATION
Proposed Small Structure replacement on 191st Street
Over Unnamed Tributary of Stony Creek
Wayne Township, Hamilton County, Indiana
Small Structure No. 23017
GEOTILL Project No. 112028301

Prepared For:

DLZ Indiana, LLC
2211 E Jefferson Blvd
South Bend, IN 46615

Attn: Mr. Haseeb A. Ghumman, PE, PTO
Transportation Department Manager

September 8, 2020

7732 Loma Court
Fishers, IN 46038
Ph. 317-449-0033 Fax 317- 285-0609 (info@geotill.com)

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September 8, 2020

DLZ Indiana, LLC
120 S. Shortridge Road
South Bend, IN 46615

Attention: Mr. **Haseeb A. Ghumman, PE, PTO** |- Transportation Department Manager

Re: Geotechnical Engineering Investigation
Proposed Small Structure replacement on 191st Street
Over Unnamed Tributary of Stony Creek
Wayne Township, Hamilton County, Indiana
Project No. 1863-2016-90
Structure No. 23017
GEOTILL Project No. 112028301

Gentlemen:

Submitted herewith is the report of our geotechnical engineering investigation for the above referenced project. This study was authorized in accordance with Proposal Agreement No. 09111118 dated October 4, 2018.

This report contains the results of our field and laboratory testing program, an engineering interpretation of this data with respect to the available project characteristics, and recommendations to aid in the design and construction of foundations and other earth-connected phases of this project. We wish to remind you that we will store the samples for 30 days, after which time they will be discarded unless you request otherwise.

We appreciate the opportunity to be of service to you on this project. If we can be of any further assistance, or if you have any questions regarding this report, please do not hesitate to contact either of the undersigned.

Sincerely,

GEOTILL INC.

Fawzy Ezzein

Fawzy Ezzein, Ph.D.
Project Engineer

MALEK M. SMADI
REGISTERED
No.
PE10505390
STATE OF
INDIANA
PROFESSIONAL ENGINEER

Malek Smadi

Malek Smadi, Ph.D., P.E.
Principal Engineer
(317) 449-0033 Ext. 101

Copies: (1) Attn: Mr. Haseeb A. Ghumman, PE, PTO

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GEOTECHNICAL ENGINEERING INVESTIGATION

Proposed Small Structure Replacement on 191st Street
Over Unnamed Tributary of Stony Creek
Wayne Township, Hamilton County, Indiana
Small Structure No. 23017
GEOTILL Project No. 112028301

1.0 INTRODUCTION

This report presents the results of our geotechnical engineering investigation for the proposed structure replacement project in Wayne Township, Hamilton County, Indiana starts at Station 13+00.00, Line "PR-A" and ends at Station 21+25.00, Line "PR-A" (see Project Location Map, Figure 1 in Appendix A). The project is shown on the General Site Map (see Figure 2 in Appendix A).

This exploration was performed to characterize and evaluate the suitability of the soils beneath the project site surface and to develop recommendations relative to roadway subgrade treatments as well as the support of the proposed drainage structures. The study consisted of an exploratory drilling and sampling program, laboratory testing of soil samples obtained from the test boring locations, engineering analyses, and preparation of this report.

2.0 PURPOSE OF WORK

The purpose of this study was to evaluate the general subsurface conditions and characteristics along the proposed roadway alignment by drilling seven (7) soil test borings. Five roadway boring and two structure borings were obtained to evaluate the subsurface condition for the roadway and drainage structure support for the proposed project. In addition, the site has been evaluated with respect to potential construction problems. Recommendations are included that address matters of earthwork and quality control during construction.

3.0 PROJECT DESCRIPTION

Hamilton county is developing plans for the proposed small structure (culvert) replacement on 191st street over unnamed Tributary of Stony Creek in Wayne Township, Hamilton County, Indiana. The project begins at Station 13+00.00, Line "PR-A" and ends at Station 21+25.00, Line "PR-A". The project is located on 191st street about 1000 ft west of the intersection of 191st Street and Cyntheanne (Lat., Long. 40.066964°°, -85.885634°). The following table shows the details for the proposed pre-cast concrete box culvert.

Table-1: Details for the Proposed Concrete 3-Sided Structure

Project No	1863-2016-90
Culvert Asset ID	23017
Station, Line "PR-A"	18+25.00
Span, ft	16.0
Height, ft	9.0
Length, ft	67.0
Flow line Up Stream EL	808.26
Flow line Down Stream EL	806.25
Invert Up Stream EL	805.09
Invert Down Stream EL	803.08
Location on 191st Street	1000 ft west of Cyntheanne Rd.

The proposed profile grade along the centerline of the proposed road will be different from the existing profile grade along most of the alignment as shown on the plans. In some areas, the proposed road will require some filling and cutting from the existing profile grade.

4.0 SCOPE OF WORK

4.1 Field Exploration

Subsurface conditions for the proposed the structure replacement project were explored by GEOTILL on July 29, 2020. Drilling was performed with vehicle mounted drilling rig using hollow-stem-augers to advance the boreholes. The culvert soil test borings were extended

through the asphalt to a depth of 35 feet. Split-spoon samples were obtained by using standard penetration test (SPT) procedures (American Association of State Highway and Transportation Officials-AASHTO Method T206) at 2.5 and 5.0-feet intervals in all borings.

Subsequent to drilling activities, each test borehole was backfilled in accordance with the specifications set forth by the Indiana Department of Transportation (INDOT) document "Exhibit C" and the INDOT "Aquifer Protection Guidelines".

The number, locations, and depths of the borings were selected by GEOTILL and approved by INDOT. The soil boring locations were staked in the field by GEOTILL field personnel. The borings were drilled at the approximate locations noted on the boring logs in Appendix B.

Boring logs, which show visual descriptions of all soil strata encountered using INDOT classification, are included in Appendix B. Sampling information and other pertinent field data and observations are also included on the boring logs. In addition to the boring logs, a sheet defining the terms and symbols used on the logs and explaining the standard penetration test (SPT) procedure is provided immediately preceding the boring logs in Appendix B.

The disturbed soil samples were visually classified by an engineer in accordance with INDOT requirements using the AASHTO Soil Classification System and the visual classifications. Final boring logs were subsequently prepared and are included in Appendix B. Soil natural moisture content, pocket penetrometer readings and organic content for some samples were performed on representative samples. In addition, a bulk soil sample obtained during the field investigation was tested for moisture density relation (standard proctor). The results are shown in the Appendix.

5.0 GENERAL SITE CONDITIONS

5.1 Subsurface Conditions

The general subsurface conditions at the site were explored by drilling seven (7) soil test borings to depths ranging from 10 to 21.5 feet. Descriptions of the subsurface conditions encountered in each test boring are in the following paragraphs. The soil boring logs are in Appendix B. It should be noted that the stratification lines shown on the soil boring logs represent approximate transitions between material types. In-situ stratum changes could occur gradually or at slightly different depths and variations in the soil stratigraphy.

The test borings that were drilled for this project revealed approximately 7.5 to 12.5 inches of asphalt underlain by about 4.5 to 8.0 inches of gravel subbase. These surficial materials were underlain predominantly by a soft to very stiff silty clay with some thin layers of sand from depth of about 1.5 ft to 21.5 ft in soil test borings. For TB-101 and TB-102 auger refusal was encountered at depths ranging of 21 and 21.5 ft receptively. Zones of soft/loose soil were identified at a depth of 1.5 to 3.5 ft in RB-101, RB-104, and TB-101, 3.0 to 5.0 ft in RB-102, and at a depth of 5.5 to 8.0 ft in TB-101. The consistencies of the cohesive soils and the densities of the granular soils were evaluated based on the results of the Standard Penetration Test, SPT (AASHTO T-206).

Pavement conditions were explored by performing three (3) pavement cores designated as PC-101, P-102 through PC-103 along the culvert replacement project for the full depth of the pavement. Locations of the tested cores are summarized in the following table. The number, location, and depth of the test cores were selected by GEOTILL and approved by INDOT. More detailed core information is presented in Appendix B.

Table-2: Summary of Pavement Cores

Core		Core Location (º)				Core Length (in)
#	Name	Latitude	Longitude	Station	Offset (ft.)	Asphalt
1	**PC-100**	40.066976	-85.887422	13+23	5.4 Lt	9
2	**PC-101**	40.066945	-85.886816	14+90	5.4 Rt	7.5
3	**PC-102**	40.066949	-85.885232	19+35	6.6 Rt	8.5

5.2 Ground Water Conditions

Groundwater observations were made during our drilling operations by noting the depth of water on the drilling tools in the open boreholes following the withdrawal of the drilling augers and by checking the boreholes at completion of drilling activities in borings. Free groundwater was noted between 14.5 and 15.0 feet in soil test borings. It should be noted that short term water level readings in the test borings are not necessarily a reliable indication of the groundwater level and that fluctuations in the level of the groundwater will occur due to variations in rainfall and other factors. Water level readings were made in the drilled holes at the times and under the conditions stated herein and on the boring logs in Appendix B

6.0 DESIGN RECOMMENDATIONS

The following recommendations for design and construction of the earth related elements of the project have been developed on the basis of the previously described project characteristics and subsurface conditions. If there are any changes in these project criteria, including the alignment and profile of the roadway or changes in structures types and locations, a review should be made by this office.

6.1 Culvert Foundations

Our findings show that the proposed three-sided culvert can be supported on the existing naturals soils at El-801.25 to 803.26 as shown on the plans or sound rock at El-797 provided that all unsuitable soils are removed. The soil formation beneath the base of the culvert

consists of a medium stiff to very stiff silty clay with zones of loose sand and gravel.

It is extremely important that the materials at the bases of the excavations for the culvert footing be carefully observed and evaluated to verify that suitable bearing soils are present at the design bearing elevation. Any sediment from the drainage-ways, organic material, soft or loose natural soils, or otherwise unsuitable material must be undercut and replaced with compacted #53 stone beneath the base of the footing. Recommendations for inspection of the soils at the bases of these structures are provided in the Drainage Structure Installation Recommendations section of this report.

The backfill around the culvert should consist of structural backfill in accordance with Sections 904.05 and 211.03.1 of the INDOT Standard Specifications. When the fill reaches the top of the structure, two more lifts of structural fill should be placed over the structure before compacting. The backfill level should be maintained at or near the same level on both sides of the structure at all times and the fill on either side should not be higher than one lift thickness above the other side. Only light compaction equipment should be used. The operation of compaction equipment should be in accordance with the manufacturer's specifications. Drainage structure should be constructed per INDOT Specifications Section 723.

Positive scour protection at the entries and exits of the drainage structures is essential to maintaining the integrity of materials that support these structures. If riprap is used for scour protection, the natural subgrade soils should first be covered with a non-woven geotextile fabric Type 1A in accordance with Section 918.02 (a).

6.1.1 Option-1 Footing base at El-801.25 to 803.26 as shown on the plans (on silty clay soil with some weathered shale):

Based on the bearing capacity and settlement analyses presented in Appendix C, the soil parameters included in the table and figure below may be used in the design of the footings for the three-sided culvert

Table-3A: Summary of Soil Parameters for Proposed Culvert and Wing Walls footings

	For Cohesive
Factored Bearing Resistance Q_r*	8,600 psf
Nominal Bearing Capacity, Q_n*	19,275 psf
Resistance Factor $Ø_b$	0.45
Friction Angle (δ) of the backfill	22°
Friction Factor (Tan δ) of the foundation soil	N/A
Angle of Internal Friction of the foundation soil	N/A
Adhesion between foundation soil and the poured concrete footing (C_a)	2500 psf
Soil Cohesion	3,750 psf

* The nominal bearing capacity, Qn and factored bearing resistance Qr were estimated for 3' footing and max. 1" settlement (see the bearing stress versus footing width chart in Appendix C). Bearing stress versus footing width chart (Appendix C) could be used for different footing size or 0.5" settlement.

In case any unsuitable soil is encountered at the invert of footings it should be excavated and replaced with max. 18" of compacted No. 53.

Removal of unsuitable soils should be expected, based upon field evaluation as recommended in the Spread Footing Excavations section of this report.

6.1.2 Option-2 Footing base at El.797 (on weathered shale and shale):

The other option is to remove 2.5 to 3.0 ft of soil and set the footing base on rock. In this case the bearing capacity calculations are presented in Appendix C, the parameters included in the table below may be used in the design of the footings for the three-sided culvert.

Table-3B: Summary of Rock Parameters for Proposed Culvert and Wing Walls footings

	For Rock
Bearing Elevation	797
Factored Bearing Resistance Q_r*	8.5 tsf
Nominal Bearing Capacity, Q_n*	14 tsf
Resistance Factor $Ø_b$	0.45
Instantaneous Friction Angle (ϕ'_i), degrees	43.5

The magnitude of the lateral earth pressure against below-grade walls and retaining walls is dependent on the method of backfill placement, the type of backfill soil, drainage provisions, and whether or not the wall is permitted to yield during and/or after placement of the backfill. When a wall is held rigidly against horizontal movement (such as a below-grade wall that is braced by the floors, structural framing, and the other walls), the lateral earth pressure against the wall is greater than the "active" lateral earth pressure that is typically used in the design of free-standing retaining walls. Therefore, braced walls must be designed for higher, "at rest" lateral earth pressures (using an at-rest lateral earth pressure coefficient, Ko). A design illustration to aid in computing lateral earth pressures against below-grade walls and retaining walls is included as Figure 6 in the Appendix A.

6.2 Embankments and Site Grading

Given the soft to hard silty clay with some thin layers of sandy clay. that were disclosed in the soil test borings in the vicinity of the culvert locations and the proposed geometry of the embankments, it appears that new embankment slopes that are not steeper than 2 (horizontal) to 1 (vertical) should have a suitable factor of safety relative to slope failure.

It is extremely important that all earth fill that is placed adjacent to the existing highway embankment be carefully benched into the existing embankment in accordance with INDOT Standard Specification Section 203.21 in order to preclude a weak zone from forming at the interface between the existing embankment soils and the new fill soils.

Benches having a minimum width of 10 ft shall be cut into the natural slopes and existing embankment side slopes that are 4 (horizontal) to 1 (vertical), or steeper, before new engineered fill is placed. These benches shall be excavated in accordance with Section 203.21 of the INDOT Standard Specifications. The subgrade beneath the newly expanded embankment areas shall be prepared in accordance with Section 7.2, Site Preparation, of this document. Fill materials shall be placed and compacted in accordance with Section 7.3, Placement and Compaction of Engineered Fill sections of this report. All conventional embankment construction shall be performed in accordance with INDOT Standard Specifications.

6.3 Pavements

The pavement replacement on 191st street for Line "PR-A" will be full depth pavement which will require cuts and fills. The standard penetration testing indicates that the foundation soils are generally characterized to be soft to hard silty clay and loose sand.

Based upon the above considerations, the recommended subgrade treatment types are included in the following table. The subgrade treatment should be performed in accordance with INDOT Standard Specifications, Section 207.04 and the recommendations of this report. An estimated resilient modulus for improved subgrade of about 6,000 lbs./sq. in is recommended for use in the design of the pavement. The table below provides a summary of pavement design considerations including estimated resilient modulus (M_R) values, the soil classification, the depth to water, and subgrade treatment type.

Table-4: Pavement Design Consideration

Resilient Modulus (M_R) of Prepared Subgrade	6,000 psi
Resilient Modulus (M_R) of Natural Subgrade	4,000 psi
Predominant Soil Type	Silty Clay A-6
Depth to Water Table	Water 14.5 ft below existing grade
Rock Elevation	Rock was encountered during the drilling at 21.5 ft (TB-101 and TB-102)
Filter Fabric Required for Underdrains	Yes
Subgrade Treatment: Pavement Patching	Subgrade Treatment Type IC, 12" of # 53 aggregate

If subsurface drains are used, filter fabric shall be used. It is very important to provide positive drainage during construction before the subgrade treatment is performed in order to avoid wet soil conditions. Ditches must be kept open at all times, and the subgrade should be graded at the end of each day, to facilitate good drainage.

Considering the soil type and properties explained before, if moist and/or low density soil is encountered, we recommend that foundation pavement improvement be performed. The foundation pavement improvement for the roadway shall consist of a maximum of 12 in. of excavation below the subgrade. A geotextile Type 2B in accordance with Indiana Standard Specifications Section 918.02(c) shall then be placed on the exposed undercut subgrade with sufficient excess such that it can be wrapped over the top of the aggregate utilized to reestablish the grade. This aggregate should consist of INDOT No. 5 crushed stone. For planning and estimating purposes at this time, we recommend that quantities of foundation soil improvement for an undercut depth of 12 in., as discussed, be included in the contract, equal to 5 percent of the subgrade area provided the work can be sequenced as suggested above. In addition, it should be noted that if undercutting is necessary, care and good judgment should be made to avoid undermining of the adjacent pavement.

7.0 GENERAL CONSTRUCTION PROCEDURES AND RECOMMENDATIONS

Since this exploration study identified actual subsurface conditions only at the test boring locations, it was necessary for our geotechnical engineers to extrapolate these conditions in order to characterize the entire project site. Even under the best of circumstances, the conditions encountered during construction can be expected to vary somewhat from the test boring results and may, in the extreme case, differ to the extent that modifications to the foundation recommendations become necessary. Therefore, we recommend that GEOTILL be retained as a geotechnical consultant through the earth-related phases of this project to correlate actual soil conditions with test boring data, identify variations, conduct additional tests that may be needed and recommend solutions to earth-related problems that may develop.

7.1 Spread Footing Excavations

The soil at the base of each spread footing excavation should be evaluated by a geotechnical engineer or designee to ensure that all loose, soft, or otherwise undesirable material is removed at footing locations and that the footing will bear on satisfactory material. At the time of such inspection, it will be necessary to make hand auger borings or use a hand penetration device according to INDOT standard procedure in the base of the footing excavation to ensure that the soils below the base are satisfactory for foundation support. The necessary depth of penetration will be established during inspection.

If soft, loose, or otherwise unsuitable material are encountered in the footing excavations, and it is inconvenient to lower the footings, the proposed footing elevations may be re-established by backfilling after the undesirable material has been removed. The undercut excavation beneath each footing should extend to suitable bearing soils and the dimensions of the excavation base should be determined by imaginary planes extending outward and down on a 2 (vertical) to 1 (horizontal) slope from the base perimeter of the footing (see

Figure 5 in the Appendix A). The entire excavation should then be refilled with a well-compacted structured fill in accordance with Section 203.09 of the INDOT Standard Specifications. Special care should be exercised to remove any sloughed, loose, or soft materials near the base of the excavation slopes. In addition, special care should be taken to "tie-in" the compacted fill with the excavation slopes, with benches as necessary, to ensure that no pockets of loose or soft materials will be left in place along the excavation slopes below the foundation bearing level.

Soils exposed in the bases of all satisfactory footing excavations should be protected against any detrimental change in condition such as from disturbance, rain, and freezing. Surface run-off water should be drained away from the excavation and not allowed to pond. If possible, all footing concrete should be placed the same day the excavation is made. If this is not practical, the footing excavations should be adequately protected.

7.2 Site Preparation

The initial step in site preparation should include stripping of the existing vegetation, topsoil and any organic-containing materials from site. If any fill debris is encountered, it should also be removed and replaced with B-borrow. The exposed subgrade should then be evaluated and any wet, soft or otherwise unsuitable soils encountered should be removed within the construction limits prior to construction of the roadway embankment and pavement. Proof rolling of the subgrade should be performed in accordance with the INDOT Standard Specifications, Section 203.26 within all areas where new fill or pavement will be placed. Care should be exercised during grading operations at the site. Due to the nature of the near-surface soils, the traffic of heavy equipment, including heavy compaction equipment, may create pumping and general deterioration of the shallower soils. Additional removal of weak materials may also be required, especially if excess surface water is present on site. The grading, therefore, should be done during a dry season, if possible, however, if it is not possible, the wet soil should be removed and replaced or it

is possible to mix it with lime.

Very soft, soft, very loose, and loose or otherwise unsuitable organic-containing materials encountered during the proof rolling operations shall be removed and replaced with compacted B-borrow to a depth of at least 2 feet above the groundwater level (if free groundwater is encountered within an excavation). If removal and replacement is not a feasible option, aeration, and compaction of the soils should be considered in accordance with Section 211.04 of INDOT Standard Specifications.

7.3 Placement and Compaction of Engineered Fill

Engineered fill should be placed in lift thicknesses not to exceed approximately 8 inches and compacted to a minimum of 95 percent of the standard Proctor maximum dry density (AASHTO T99) as specified in the current INDOT Standard Specifications. It is likely that some drying of the fill material will be required before being placed in order to meet the INDOT Specification for fill placement. It is probable that this will also be the case for most of the soil materials encountered within the range of subgrade treatment. However, adequate moisture conditioning may be difficult during wet seasons and, during such seasons, it is possible to use chemical modification in accordance with Section 215 of INDOT Standard Specifications or granular material may be necessary to satisfy the minimum compaction requirements.

The placement of fill should be accomplished in accordance with Section 203.09 of INDOT Standard Specifications. Compacted B-borrow for use in conjunction with this project should be as defined in INDOT Standard Specifications, Sections 203.08 and 211.02.

Where fill material is placed on existing slopes, benches should be cut into the existing slopes before the fill placement so as to preclude a shear plane from developing at the interface. Benches having a minimum width of 10 feet should be cut into the natural slopes

before new engineered fill is placed. These benches should be excavated in accordance with Section 203.21 of the INDOT Standard Specifications.

Where the alignment of the roadway crosses existing drainage ditches, the soft sediment in the base of the ditches should be removed and replaced with B-borrow to a thickness of at least 2 feet above the free groundwater level. Otherwise, backfilling should be done in accordance with Section 203.09 of the INDOT Standard Specifications.

7.4 Erosion Protection

Highly erodible, granular material such as structure backfill should not be used in proposed ditches or within 12 in. of the required final grade of side slopes. The material used to encase the embankment should be non-erodible, cohesive material that is free from debris and other deleterious materials and suitable for sustaining vegetation in accordance with Section 203.22 and 203.23 of the INDOT Standard Specifications. The final slopes should be seeded or sodded for erosion control. If needed, the slope should be protected with an erosion control blanket to provide for adequate seed germination and rooting.

7.5 Drainage Structure Installation Recommendations

While the actual conditions encountered at the time of construction should be evaluated and all unsuitable soils detected at that time should be removed and replaced, the materials encountered at the anticipated invert elevations appear to be satisfactory for support of the roadway drainage structures.

All topsoil and any soft sediment should be removed along the entire length of all proposed drainage structures and replaced with structure backfill. The outer 10 feet of the structural fill under the ends of the structure should be enveloped with a continuous length of permeable non-woven geotextile Type 1A. This geotextile should extend the entire width of the excavation. All the structure backfill surrounding the drainage structures should be

compacted to at least 95 percent of the maximum dry density as determined in accordance with Section 203.24 of the INDOT Standard Specifications. The soil in the bottom of the excavation, any bedding material, and the structural backfill, should be tested to ensure compliance with these density criteria. If during construction, soft soils are encountered at depths that make removal impractical, or if 95 percent of the maximum dry density cannot be obtained at the bottom of the excavation, or in other areas, this office should be contacted for additional recommendations.

The structure backfill should be placed around the structure in uniform layers, not exceeding 6 in. loose lift thickness and mechanically compacted thoroughly to produce the required dry density. The backfill material should be placed and compacted in layers simultaneously on each side of the structure. Compaction equipment should run parallel to the axis of the structure, starting at the extremity and progressing toward the structure. When the level of fill reaches the top of the structure, two lifts should be carefully spread and hand compacted over the structure without traversing the structure with heavy equipment. The structural backfill should be compacted to at least 95 percent of the maximum dry density, as determined in accordance with Section 203.24 of the INDOT Standard Specifications. Caution should be exercised when compaction with heavy equipment is used, because a minimum of two lifts of backfill should be placed on top of the structure, hand compacted, and tested. In this project the thickness of those two lifts are lower than the usual; therefore extra precautions should be taken into consideration when compacting with heavy equipment. The compaction equipment should traverse the drainage structure perpendicular to the axis.

7.6 Construction Dewatering

The ground water data obtained during drilling operations suggests that dewatering may be required. In cases where saturated sand is encountered in the base of an excavation, it will not be possible to pump water directly from the base of the excavation without causing

deterioration of the subgrade soil. In this case, it may be necessary to depress the groundwater table using wells or well points. The contractor shall submit a dewatering plan to the Engineer for approval. The best dewatering system for each case must be determined at the time of construction based upon actual field conditions.

7.7 Construction Monitoring

We recommend that a GEOTILL geotechnical engineer or designee be retained to continuously evaluate and test the subgrade and footing excavations before forming and placing steel or concrete. If the soils upon which the footings are to be constructed become soft or disturbed, or if unsuitable materials are encountered, these materials should be removed and replaced with acceptable structural fill or as directed by the engineer.

Concrete strength and consistency tests should also be carried out, in accordance with the project specifications.

8.0 LIMITATIONS OF STUDY

An inherent limitation of any geotechnical engineering study is that conclusions must be drawn on the basis of data collected at a limited number of discrete locations. The recommendations provided in this report were developed from the information obtained from the test borings that depict subsurface conditions only at these specific locations and at the particular time designated on the logs. Soil conditions at other locations may differ from conditions occurring at these boring locations. The nature and extent of variations between the borings may not become evident until the course of construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report after performing on-site observations during the excavation period and noting the characteristics of any variation.

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied. This company is not responsible for the independent conclusions, opinions, or recommendations made by others based on the field exploration and laboratory test data presented in this report.

The scope of our services does not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, ground water, or surface water within or beyond the site studied.

APPENDICES

APPENDIX A

PROJECT LOCATION MAP – Figure 1
GENERAL SITE PLAN – Figure 2 (a-b)
BORING LOCATION MAPS – Figure 3 (a-c)
BORINGS ON PLAN-Figure 4 (a-b)
DESIGN ILLUSTRATION FOOTINGS IN UNDERCUT AREA– Figure 5
LATERAL EARTH PRESSURE AGAINST BELOW-GRADE WALL – Figure 6
ASSUMING UNDRAINED BACKFILL WITH HYDROSTATIC PRESSURE

APPENDIX B

FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION
LOGS OF ROADWAY BORINGS
STANDARD PROCTOR TEST RESULTS
PAVEMENT CORE REPORT

APPENDIX C

CALCULATIONS FOR SPREAD FOOTINGS BEARING CAPACITY
BEARING CAPACITY SETTLEMENT ANALYSES
Option-1 The Footing Base at El.800 (on Soil)
Option-2 The Footing Base at El.797 (on Rock)

APPENDIX A

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GEOTILL
ENGINEERING, INC.

FIGURE NO. 1 – PROJECT LOCATION MAP

Project: 191st Street over unnamed tributary of Stony Creek
Hamilton County , Indiana

STRUCTURE # 23017 **Scale: NTS**

GEOTILL PROJECT NO
112028301

DATE: September 8, 2020

CLIENT: DLZ INDIANA LLC

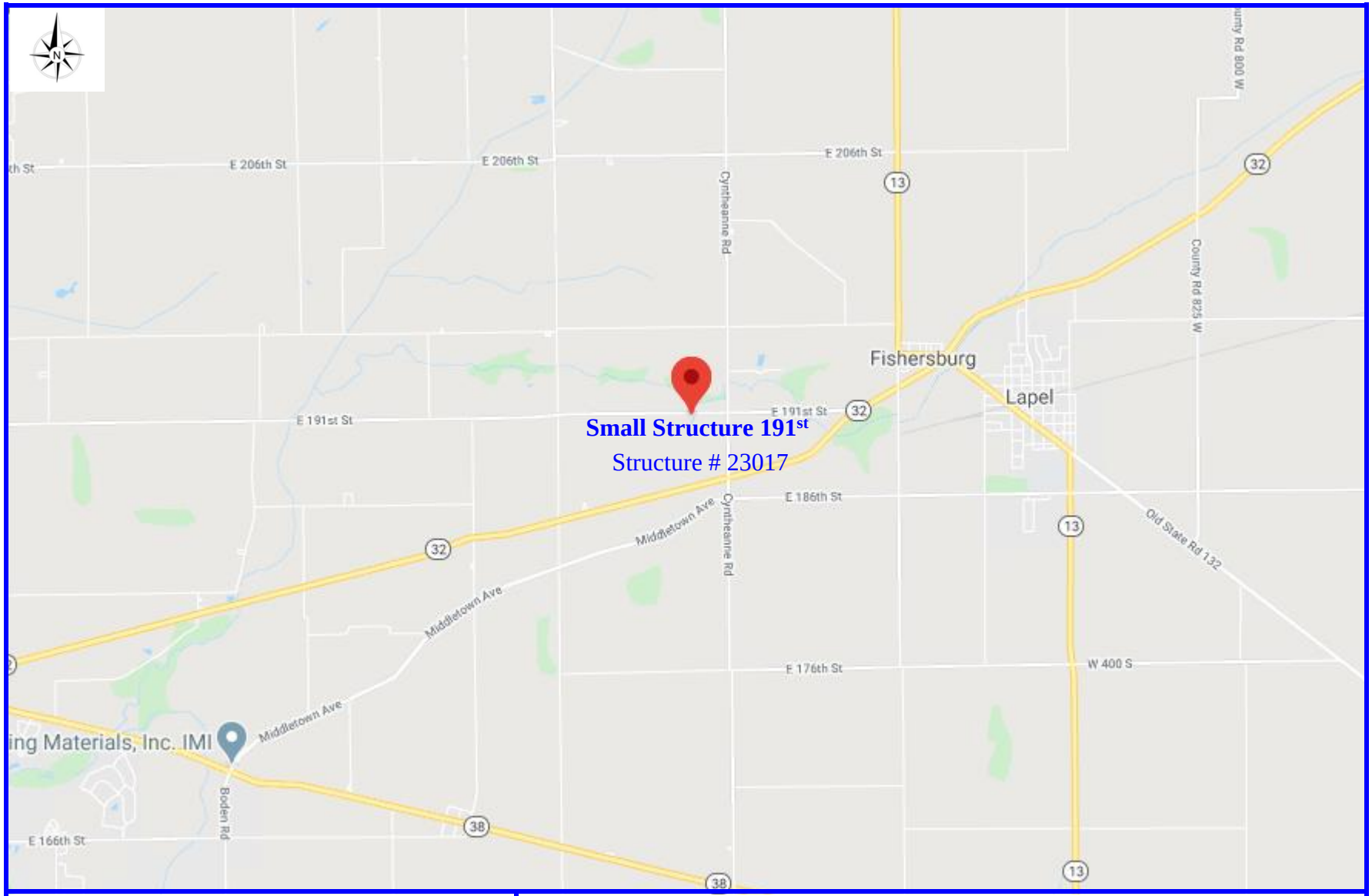


FIGURE NO. 2.a – GENERAL SITE PLAN

Project: **191st Street over unnamed tributary of Stony Creek**
Hamilton County , Indiana

STRUCTURE # 23017 **Scale:** **NTS**

GEOTILL ENGINEERING, INC.

GEOTILL PROJECT NO	DATE: September 8, 2020	CLIENT: DLZ INDIANA LLC
112028301		

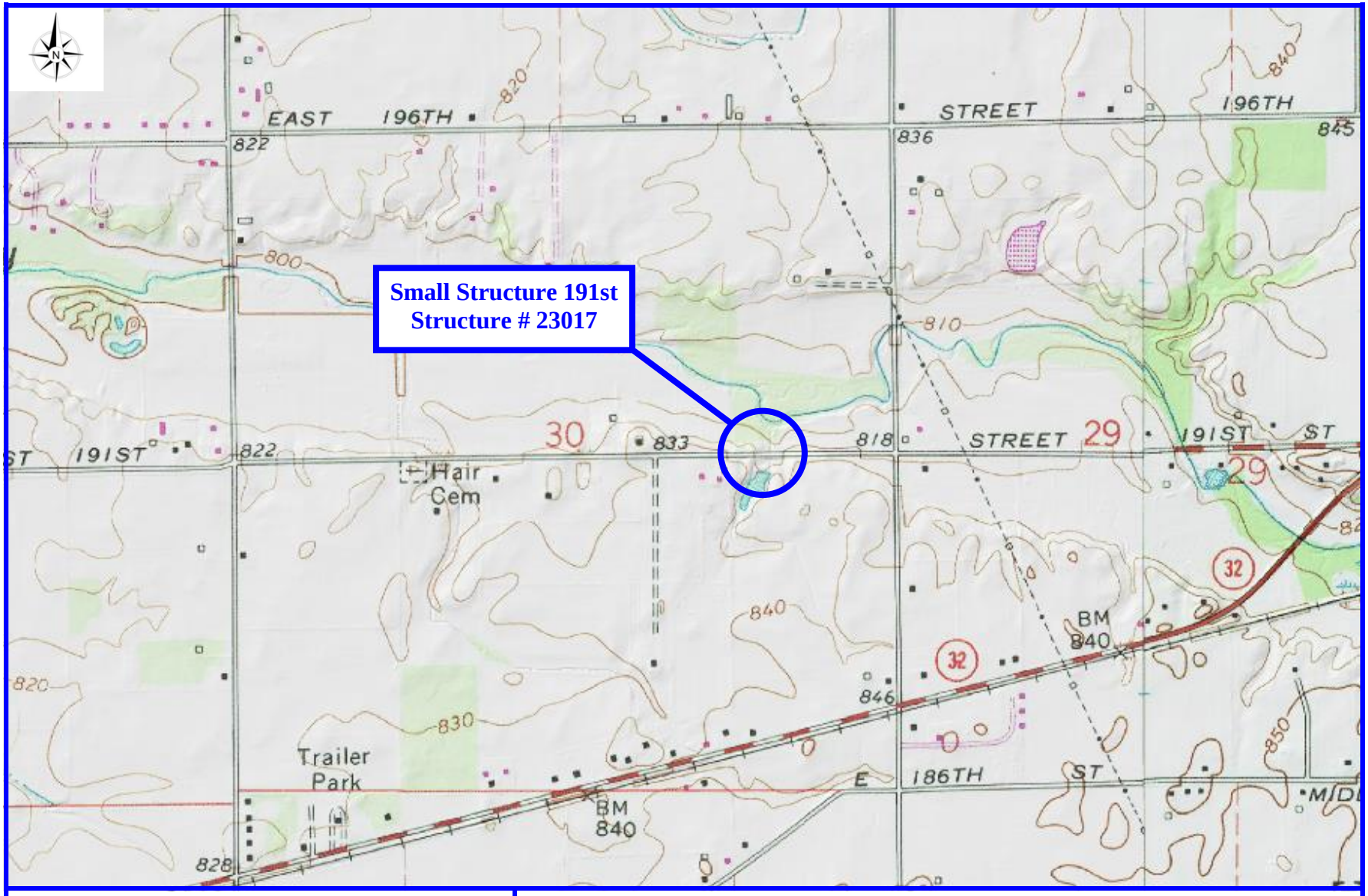


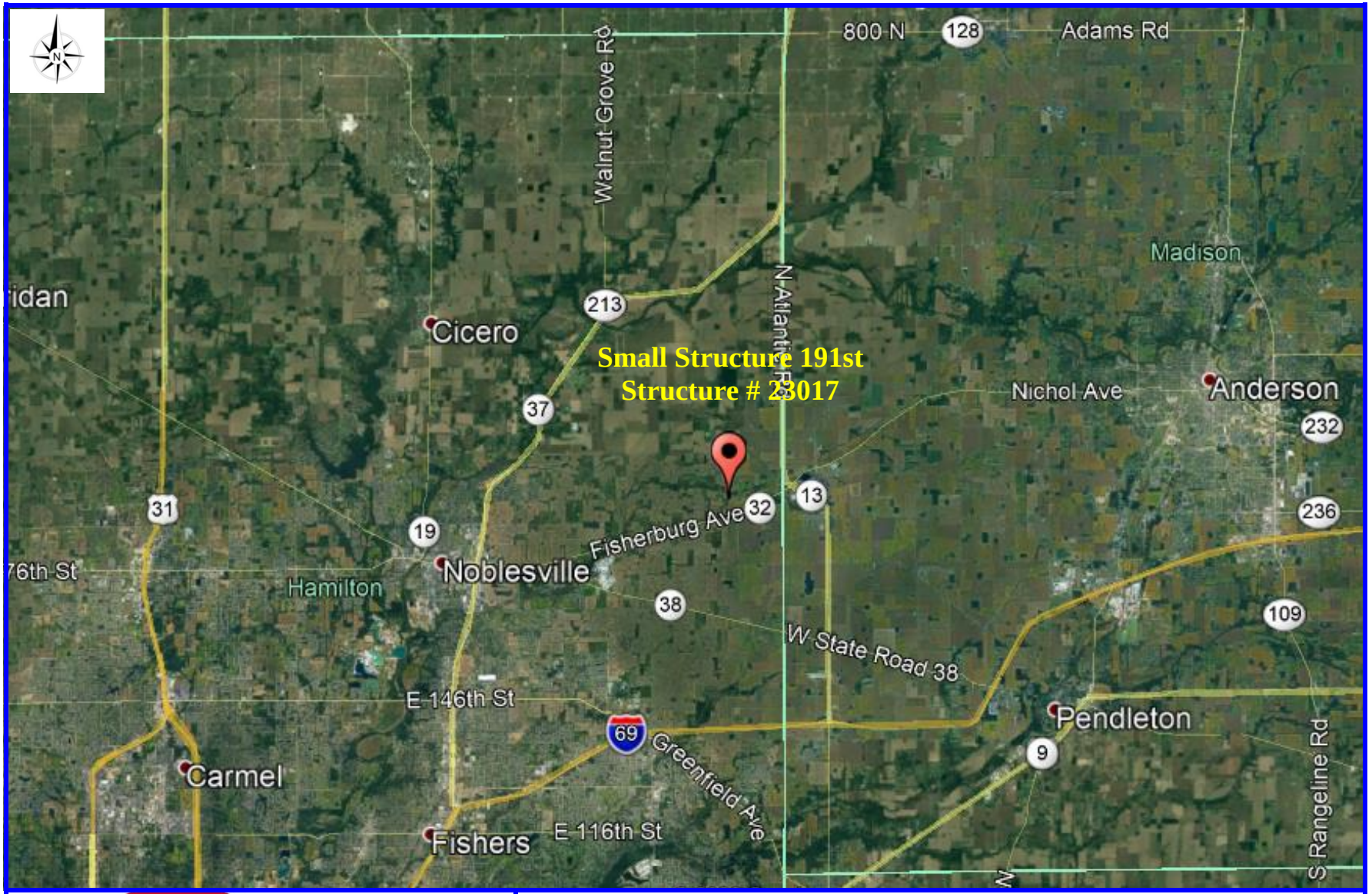
FIGURE NO. 2.b – GENERAL SITE PLAN

GEOTILL ENGINEERING, INC.

Project: **191st Street over unnamed tributary of Stony Creek**
Hamilton County , Indiana

STRUCTURE # 23017 **Scale:** **NTS**

GEOTILL PROJECT NO	**DATE:**	**CLIENT:**
112028301	**September 8, 2020**	DLZ INDIANA LLC



GEOTILL ENGINEERING, INC.

FIGURE NO. 3.a – BORING LOCATION MAP

Project: **191st Street over unnamed tributary of Stony Creek**
Hamilton County , Indiana

STRUCTURE # 23017 **Scale:** **NTS**

GEOTILL PROJECT NO 112028301	**DATE: September 8, 2020**	**CLIENT:** DLZ INDIANA LLC

GEOTILL
ENGINEERING, INC.

FIGURE NO. 3.b – BORING LOCATION MAP

Project: **191st Street over unnamed tributary of Stony Creek**
Hamilton County, Indiana

STRUCTURE # 23017 **Scale: NTS**

GEOTILL PROJECT NO 112028301	**DATE: September 8, 2020**	**CLIENT:** DLZ INDIANA LLC

GEOTILL ENGINEERING, INC.

FIGURE NO. 3.c – BORING LOCATION MAP

Project: **191st Street over unnamed tributary of Stony Creek**
Hamilton County, Indiana

STRUCTURE # 23017 **Scale: NTS**

GEOTILL PROJECT NO	**DATE: September 8, 2020**	**CLIENT:** DLZ INDIANA LLC
112028301		

GEOTILL
ENGINEERING, INC.

FIGURE NO. 3.c – BORING LOCATION MAP

Project: **191st Street over unnamed tributary of Stony Creek**
Hamilton County, Indiana

STRUCTURE # 23017 **Scale: NTS**

GEOTILL PROJECT NO	DATE: September 8, 2020	CLIENT: DLZ INDIANA LLC
112028301		

GEOTILL
ENGINEERING, INC.

FIGURE NO. 3.c – BORING LOCATION MAP

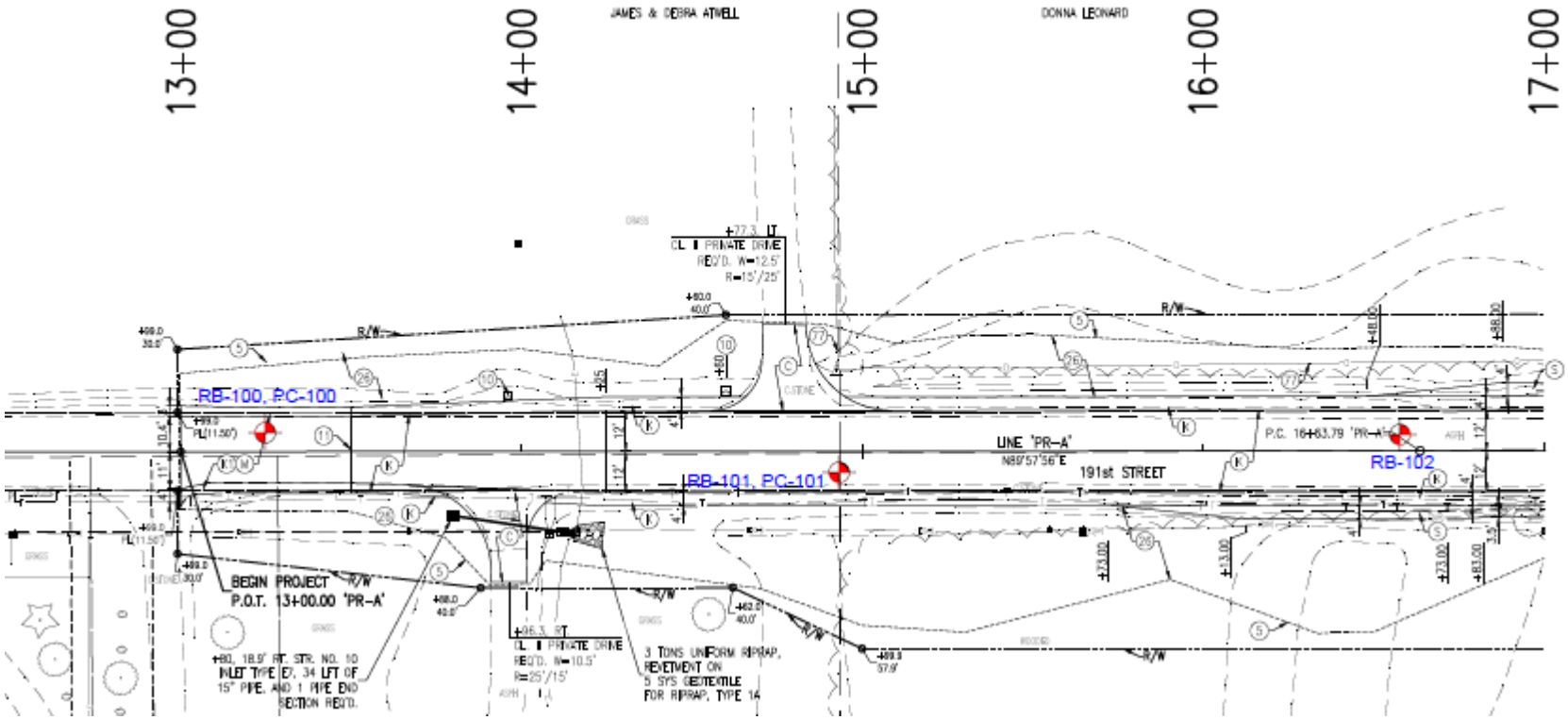
Project: **191st Street over unnamed tributary of Stony Creek**
Hamilton County, Indiana

STRUCTURE # 23017 **Scale:** **NTS**

GEOTILL PROJECT NO
112028301

DATE: September 8, 2020

CLIENT: DLZ INDIANA LLC



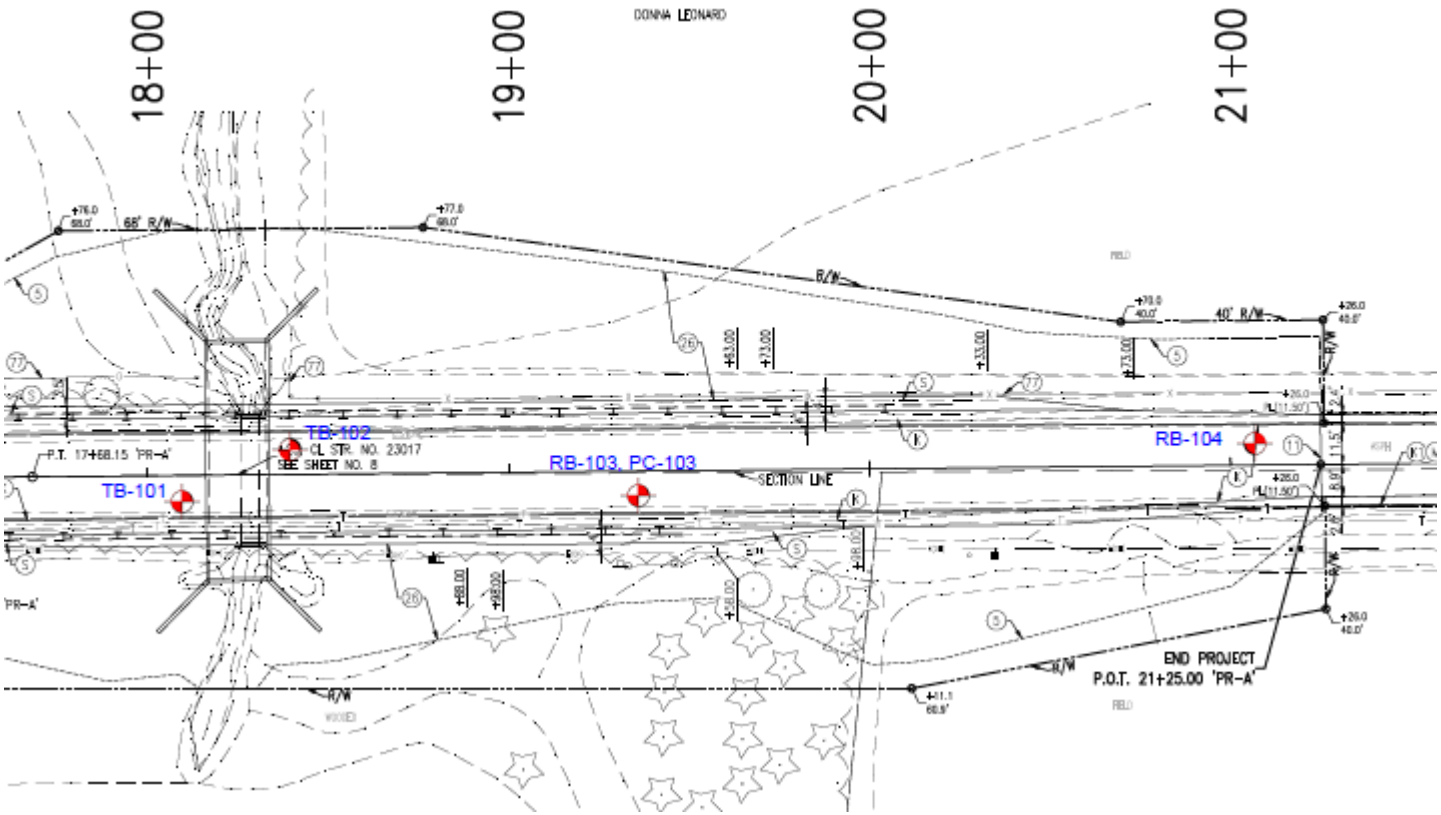
GEOTILL ENGINEERING, INC.

FIGURE NO.4a – BORINGS ON PLAN

Project: **191st Street over unnamed tributary of Stony Creek**
Hamilton County, Indiana

STRUCTURE # 23017 **Scale: NTS**

GEOTILL PROJECT NO	**DATE: September 8, 2020**	**CLIENT:** DLZ INDIANA LLC
112028301		



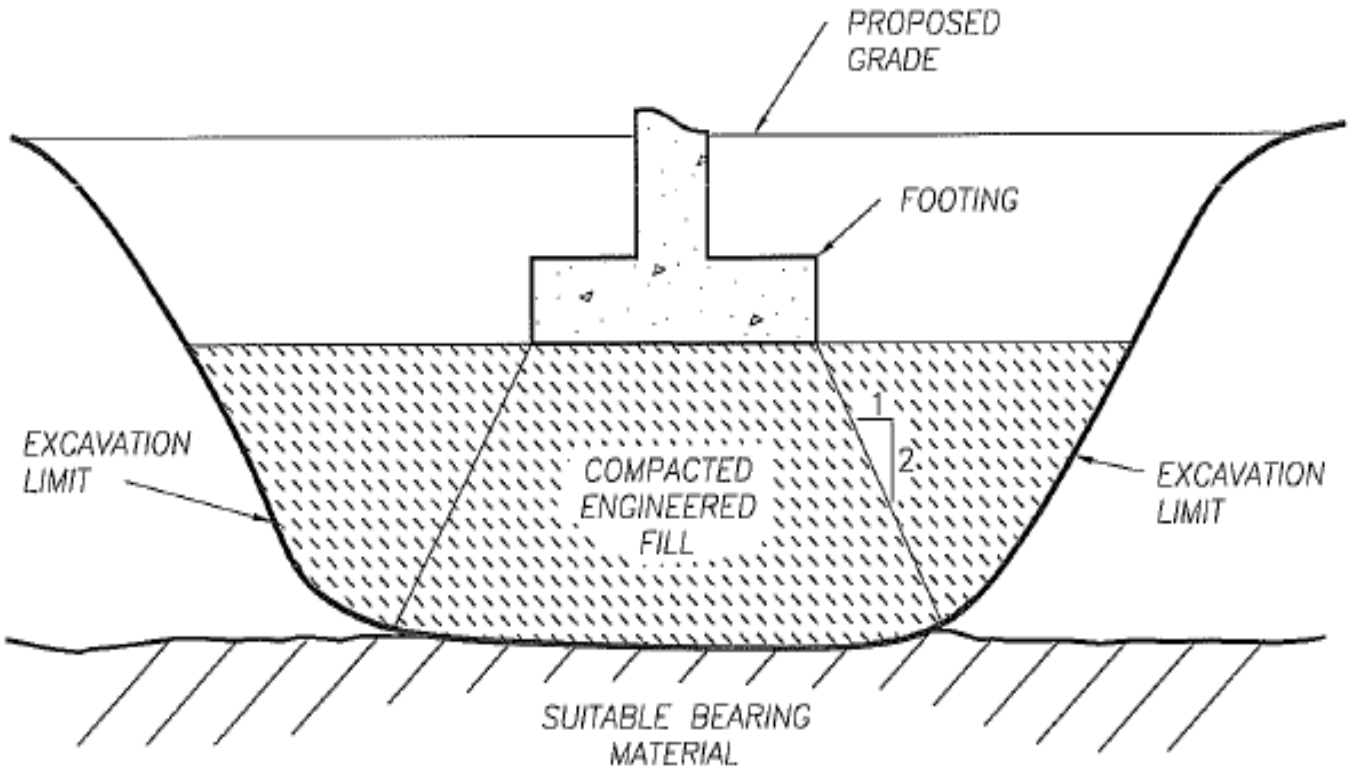
GEOTILL ENGINEERING, INC.

FIGURE NO.4b – BORINGS ON PLAN

Project: **191st Street over unnamed tributary of Stony Creek**
Hamilton County, Indiana

STRUCTURE # 23017 **Scale:** **NTS**

GEOTILL PROJECT NO	**DATE: September 8, 2020**	**CLIENT:** DLZ INDIANA LLC
112028301		



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ENGINEERING, INC.

FIGURE NO. 5 – DESIGN ILLUSTRATION
FOOTINGS IN UNDERCUT AREA

Project: **191st Street over unnamed tributary of Stony Creek**
Hamilton County, Indiana

STRUCTURE # 23017 **Scale:** **NTS**

GEOTILL PROJECT NO 112028301	**DATE: September 8, 2020**	**CLIENT:** DLZ INDIANA LLC

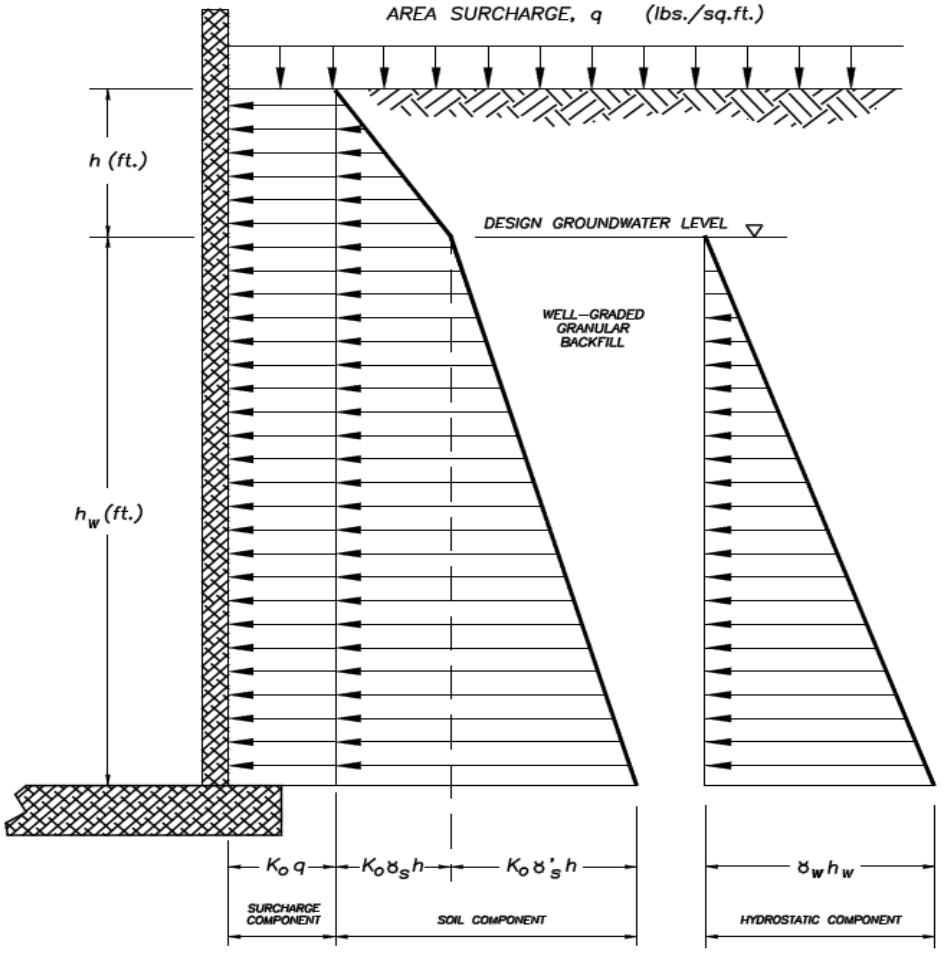

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FIGURE NO. 6 – Lateral Earth Pressure Against Below-Grade Wall Assuming Undrained Backfill with Hydrostatic Pressure

Project: **191st Street over unnamed tributary of Stony Creek**
Hamilton County, Indiana
STRUCTURE # 23017 **Scale:** **NTS**

GEOTILL PROJECT NO 112028301	**DATE: September 8, 2020**	**CLIENT:** DLZ INDIANA LLC

APPENDIX B

FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION
LOGS OF ROADWAY BORINGS
STANDARD PROCTOR TEST RESULTS
PAVEMENT CORE REPORT

FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

NON-COHESIVE SOILS
(Silt, Sand, Gravel and Combinations)

Density

Very Loose	-	5 blows/ft or less
Loose	-	6 to 10 blows/ft
Medium Dense	-	11 to 30 blows/ft
Dense	-	31 to 50 blows/ft
Very Dense	-	51 blows/ft or more

Relative Proportions

Descriptive Term	Percent
Trace	1 - 10
Little	11 - 20
Some	21 - 35
And	36 - 50

Particle Size Identification

Boulders	-	8 inch diameter or more	
Cobbles	-	3 to 8 inch diameter	
Gravel	-	Coarse	- 1 to 3 inch
		Medium	- ½ to 1 inch
		Fine	- ¼ to ½ inch
Sand	-	Coarse	2.00mm to ¼ inch (dia. of pencil lead)
		Medium	0.42 to 2.00mm (dia. of broom straw)
		Fine	0.074 to 0.42mm (dia. of human hair)
Silt			0.074 to 0.002mm (cannot see particles)

COHESIVE SOILS
(Clay, Silt and Combinations)

Consistency

Very Soft	-	3 blows/ft or less
Soft	-	4 to 5 blows/ft
Medium Stiff	-	6 to 10 blows/ft
Stiff	-	11 to 15 blows/ft
Very Stiff	-	16 to 30 blows/ft
Hard	-	31 blows/ft or more

Plasticity

Degree of Plasticity	Plasticity Index
None to slight	0 - 4
Slight	5 - 7
Medium	8 - 22
High to Very High	over 22

Standard Penetration Test — Driving a 2.0" O.D. 1-3/8" I.D. sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30 inches. It is customary for GEOTILL to drive the spoon 6 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and making the test are recorded for each 6 inches of penetration on the drill log (Example — 6-8-9). The standard penetration test result can be obtained by adding the last two figures (i.e., 8 + 9 = 17 blows/ft). (ASTM D-1586-99).

Strata Changes — In the column "Soil Descriptions" on the drill log the horizontal lines represent strata changes. A solid line (_____) represents an actually observed change. A dashed line (_ _ _ _ _ _) represents an estimated change.

Ground Water observations were made at the times indicated. Porosity of soil strata, weather conditions, site topography, etc., may cause changes in the water levels indicated on the logs.

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TEST BORING LOG

CLIENT **DLZ Indiana LLC**
PROJECT NAME **Proposed Small Structure #23017**
PROJECT LOCATION **Hamilton County, Indiana**

BORING # **RB-100**
JOB # **112028301**
Latitude, Longitude 40.066976, -85.887422

DRILLING and SAMPLING INFORMATION

Date Started	7/29/20	Hammer Wt.	140 lbs.
Date Completed	7/29/20	Hammer Drop	30 in.
Drill Foreman	J Sumler	Spoon Sampler OD	2 in.
Inspector	J Brodowski	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION / SURFACE ELEVATION	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
Asphalt 9"	0.8									
Gravel Fill 8"	1.5									
Brown, moist, medium stiff to stiff, Silty Clay (CL) trace gravel			1	SS			4-5-9	13.5	1.25	
			2	SS			3-3-3	21.3	2.0	Organic Content 4.24% @ 3.5' - 5'
		5	3	SS		▨	7-8-9	11.3	4.0	
			4	SS			3-5-8	11.1	4.0	
End of Boring at 10 ft	10.0	10								

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
● Noted on Drilling Tools _____ ft.
▽ At Completion _____ ft.
▼ After _____ hours _____ ft.
▨ Cave Depth 7.0 ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **DLZ Indiana LLC**
PROJECT NAME **Proposed Small Structure #23017**
PROJECT LOCATION **Hamilton County, Indiana**

BORING # **RB-101**
JOB # **112028301**
Latitude, Longitude 40.066945, -85.886816

DRILLING and SAMPLING INFORMATION

Date Started	7/29/20	Hammer Wt.	140 lbs.
Date Completed	7/29/20	Hammer Drop	30 in.
Drill Foreman	J Sumler	Spoon Sampler OD	2 in.
Inspector	J Brodowski	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION / SURFACE ELEVATION	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
Asphalt 7.5"	0.7									
Gravel Fill 8"	1.3									
Dark Brown, moist, soft, Silty Clay (CL) trace sand (Fill)			1	SS			5-3-2	17.1	1.75	Organic Content 4.07% @ 1.5'-3.0'
	3.3									
Brown, moist, medium stiff, Silty Clay (CL) trace gravel			2	SS			2-4-7	10.7	4.0	
		5								
			3	SS		▨	5-7-7	13.6	3.5	
	8.0									
Gray, moist, very stiff, Silty Clay (CL) trace rock fragments			4	SS			8-14-15	13.5	>4.5	Organic Content 1.36% @ 8.5'-10.0'
	10.0	10								
End of Boring at 10 ft										

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
● Noted on Drilling Tools _____ ft.
▽ At Completion _____ ft.
▼ After _____ hours _____ ft.
▨ Cave Depth **6.5** ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **DLZ Indiana LLC**
PROJECT NAME **Proposed Small Structure #23017**
PROJECT LOCATION **Hamilton County, Indiana**

BORING # **RB-102**
JOB # **112028301**
Latitude, Longitude 40.066981, -85.886231

DRILLING and SAMPLING INFORMATION

Date Started	7/29/20	Hammer Wt.	140 lbs.
Date Completed	7/29/20	Hammer Drop	30 in.
Drill Foreman	J Sumler	Spoon Sampler OD	2 in.
Inspector	J Brodowski	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION / SURFACE ELEVATION	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
Asphalt 11.5"	1.0									
Gravel Fill 6"	1.4									
Brown, moist, medium stiff, Silty Clay (CL) trace gravel (Fill)			1	SS			3-5-5	14.1	3.5	Organic Content 4.09% @ 1.5'3.0'
	3.3									
Brown, moist, loose, fine Sand (SP) trace silt		5	2	SS			4-5-9	12.3	>4.5	
	5.5									
Gray and Brown, moist, stiff, Silty Clay (CL) trace sand			3	SS		▨	3-4-2	10.3	0.5	
	8.0									
Gray, moist, stiff, Silty Clay (CL) trace sand and gravel (possible soft shale)			4	SS			4-5-8	14.3	3.75	
	10.0	10								
End of Boring at 10 ft										

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
Noted on Drilling Tools _____ ft.
At Completion _____ ft.
After _____ hours _____ ft.
Cave Depth **6.5** ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **DLZ Indiana LLC**
PROJECT NAME **Proposed Small Structure #23017**
PROJECT LOCATION **Hamilton County, Indiana**

BORING # **RB-103**
JOB # **112028301**
Latitude, Longitude 40.066951, -85.885122

DRILLING and SAMPLING INFORMATION

Date Started	7/29/20	Hammer Wt.	140 lbs.
Date Completed	7/29/20	Hammer Drop	30 in.
Drill Foreman	J Sumler	Spoon Sampler OD	2 in.
Inspector	J Brodowski	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

SOIL CLASSIFICATION / SURFACE ELEVATION	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
Asphalt 8.5"	0.7									
Gravel Fill 7.5"	1.3									
Brown, moist, medium stiff, Silty Clay (CL) trace sand and gravel (Fill)			1	SS			8-5-3	13.4	1.75	
			2	SS			3-5-5	13.0	2.5	
		5								
Gray, moist, medium stiff, Silty Clay (CL) trace gravel	5.5		3	SS		▨	4-6-8	14.2	3.0	
Olive, moist, very stiff, Silty Clay (CL) trace weathered shale	8.0		4	SS			4-8-15	19.7	3.0	
End of Boring at 10 ft	10.0	10								

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
● Noted on Drilling Tools _____ ft.
▽ At Completion _____ ft.
▼ After _____ hours _____ ft.
▨ Cave Depth 6.5 ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **DLZ Indiana LLC**
PROJECT NAME **Proposed Small Structure #23017**
PROJECT LOCATION **Hamilton County, Indiana**

BORING # **RB-104**
JOB # **112028301**
Latitude, Longitude 40.066992, -85.884623

DRILLING and SAMPLING INFORMATION

Date Started	7/29/20	Hammer Wt.	140 lbs.
Date Completed	7/29/20	Hammer Drop	30 in.
Drill Foreman	J Sumler	Spoon Sampler OD	2 in.
Inspector	J Brodowski	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION / SURFACE ELEVATION	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
Asphalt 11"	0.9									
Gravel Fill 8.0"	1.5									
Brown, very moist, soft, Silty Clay (CL) trace sand and gravel (Fill)			1	SS			6-3-2	23.7	1.75	
	3.3									
Brown, moist, medium stiff, Silty Clay (CL)		5	2	SS			3-3-4	21.9	1.0	
	5.5									
Gray, moist, medium stiff, Silty Clay (CL) trace gravel			3	SS		▨	4-6-6	14.3	3.5	
	8.0									
Gray, moist, medium stiff, Silty Clay (CL) trace gravel (possible soft shale)			4	SS			4-5-8	18.1	3.0	
	10.0	10								
End of Boring at 10 ft										

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
● Noted on Drilling Tools _____ ft.
▽ At Completion _____ ft.
▼ After _____ hours _____ ft.
▨ Cave Depth 7.0 ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **DLZ Indiana LLC**
PROJECT NAME **Proposed Small Structure #23017**
PROJECT LOCATION **Hamilton County, Indiana**

BORING # **TB-101**
JOB # **112028301**
Latitude, Longitude 40.066946, -85.885685

DRILLING and SAMPLING INFORMATION

Date Started	7/29/20	Hammer Wt.	140 lbs.
Date Completed	7/29/20	Hammer Drop	30 in.
Drill Foreman	J Sumler	Spoon Sampler OD	2 in.
Inspector	J Brodowski	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION / SURFACE ELEVATION	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
Asphalt 12.5"	1.1									
Gravel Fill 4.5" / Dark Brown, moist, loose, Sand and Gravel (SPG) trace broken asphalt (Fill)	3.3		1	SS			6-4-4	11.9	>4.5	Organic Content 2.79% @ 1.5'-3.0'
Brown, moist, medium stiff, Silty Clay (CL) trace gravel and sand	5.5	5	2	SS			6-3-3	10.0	2.5	
Brown, moist, soft, Silty Clay (CL) trace sand	8.0		3	SS			4-3-2	13.6	1.0	
Gray, moist, medium stiff, Silty Clay (CL) trace organics	12.0	10	4	SS			7-4-3	27.7	0.25	Organic Content 4.71% @ 8.5'-10.0'
Gray, moist, hard, Silty Clay (CL) trace weathered shale		15	5	SS		▼	10-15-17	13.4	>4.5	
		20	6	SS			39-50/2"	19.4	>4.5	
End of Boring at 21 ft - Auger Refusal	21.0									

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
Noted on Drilling Tools 15.0 ft.
At Completion ____ ft.
After ____ hours ____ ft.
Cave Depth 15.0 ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **DLZ Indiana LLC**
PROJECT NAME **Proposed Small Structure #23017**
PROJECT LOCATION **Hamilton County, Indiana**

BORING # **TB-102**
JOB # **112028301**
Latitude, Longitude 40.066987, -85.885576

DRILLING and SAMPLING INFORMATION

Date Started	7/29/20	Hammer Wt.	140 lbs.
Date Completed	7/29/20	Hammer Drop	30 in.
Drill Foreman	J Sumler	Spoon Sampler OD	2 in.
Inspector	J Brodowski	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

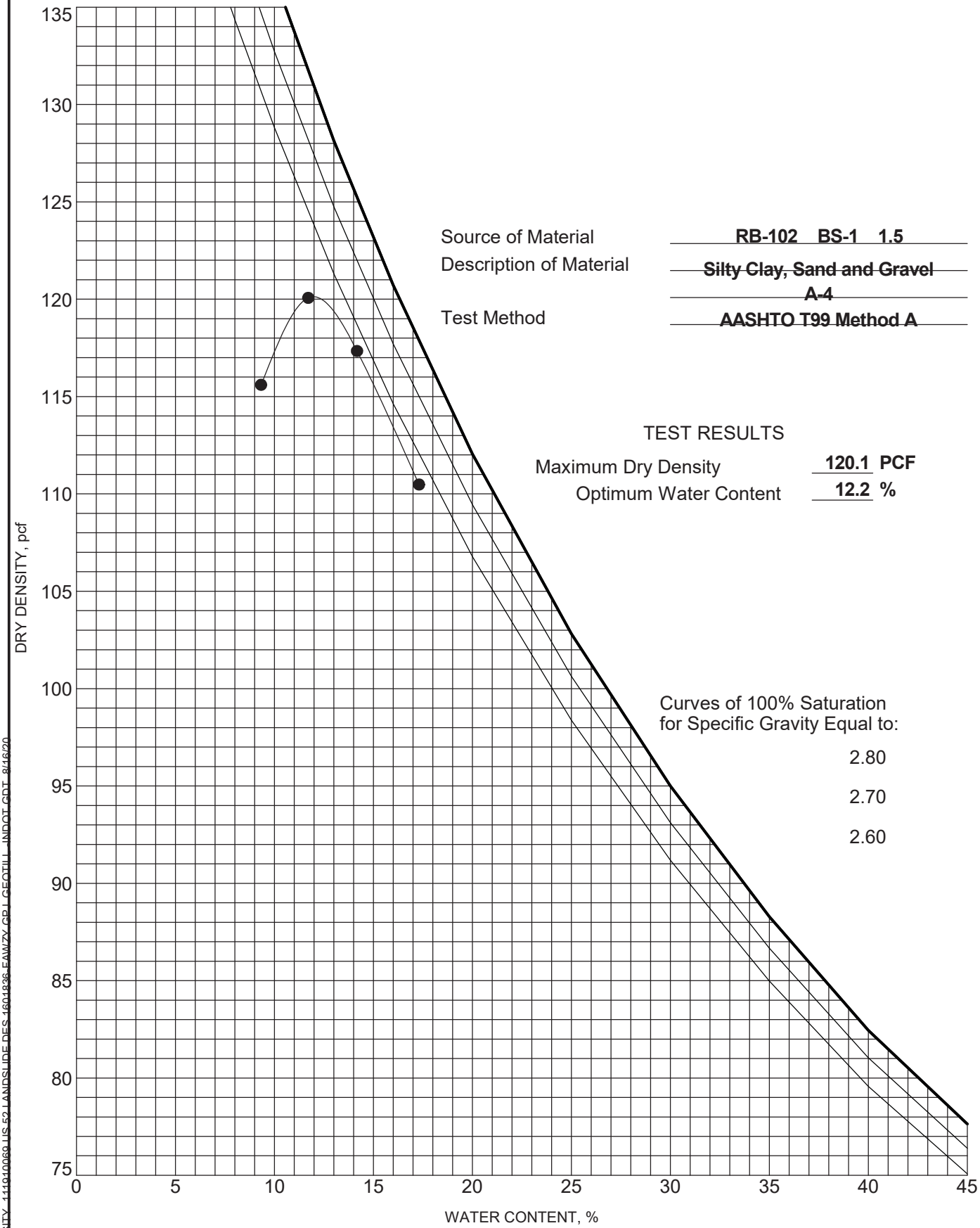
TEST DATA

SOIL CLASSIFICATION / SURFACE ELEVATION	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
Asphalt 11"	0.9									
Gravel Fill 7.5"	1.5									
Brown & Gray, moist, stiff to very stiff, Silty Clay (CL) trace sand and gravel (possible fill)			1	SS			5-8-11	11.5	3.5	Organic Content 2.73% @ 1.5'-3.0'
			2	SS			3-4-8	14.3	2.0	Organic Content 3.05% @ 3.5'-5.0'
		5	3	SS			7-5-3	6.8	3.0	
			4	SS			7-5-7	13.5	>4.5	
		10								
			5	SS		●	5-6-5	13.4	3.0	
		15								
	17.0									
Gray, moist, hard, Silty Clay (CL) trace weathered shale			6	SS			8-13-21	21.5	>4.5	
		20								
	21.5									
End of Boring at 21.5 ft - Auger Refusal			7	SS			47-50/2"	10.9	>4.5	

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
● Noted on Drilling Tools 14.5 ft.
▽ At Completion ____ ft.
▼ After ____ hours ____ ft.
Cave Depth ____ ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger



Source of Material: **RB-102 BS-1 1.5**

Description of Material: **Silty Clay, Sand and Gravel A-4**

Test Method: **AASHTO T99 Method A**

TEST RESULTS

Maximum Dry Density: **120.1 PCF**

Optimum Water Content: **12.2 %**

Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

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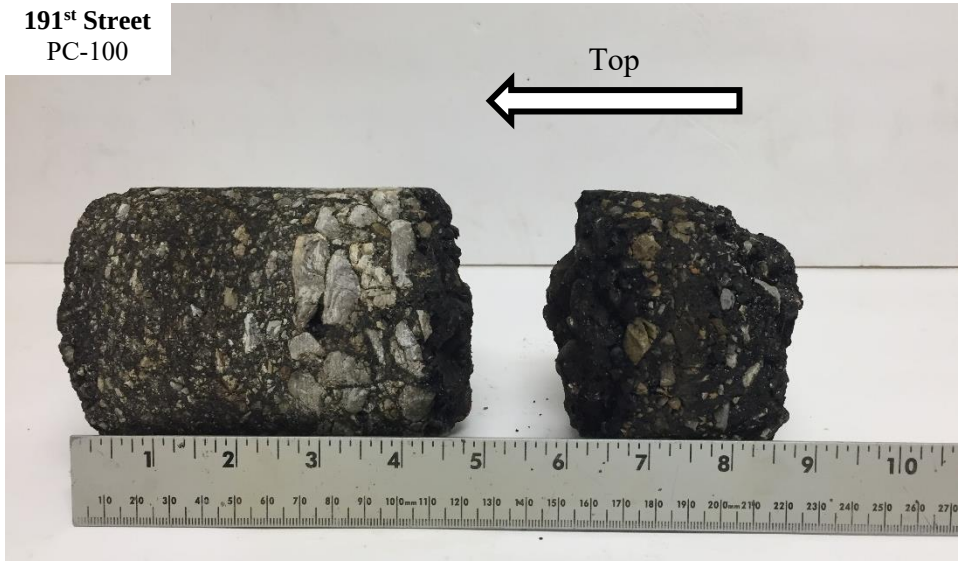
Fax: (317) 285-0609

MOISTURE-DENSITY RELATIONSHIP

Project : 191st Proposed Small Structure #23017
Project #: 112028301
County: Hamilton

PAVEMENT CORE REPORT
191st Street over Unnamed Tributary of Stony Creek
Hamilton County, Indiana
STRUCTURE # 23017
Project No: 112028301

Core	Route	Lane	Core Diam.	Latitude	Longitude
PC-100	191st Street	Driving West	4”	40.066976°	-85.887422°



Pavement Core (PC-100)

Subbase (PC-100)

Pavement Type	Depth (inches)
Surface Course	0.0”- 0.75”
Intermediate Course	0.75”- 9.0”
Subbase Type: Gravel and Sand	

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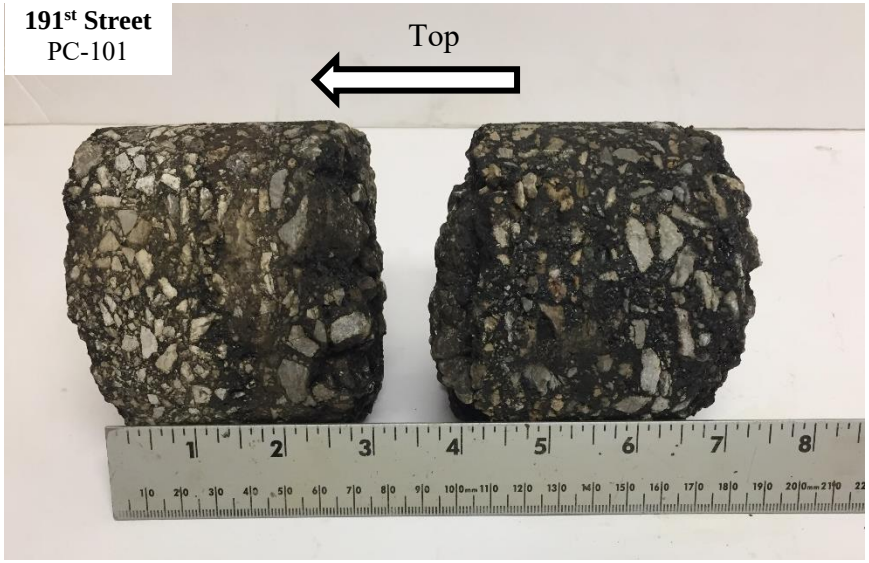
Core	Route	Lane	Core Diam.	Latitude	Longitude
PC-101	191st Street	Driving East	4”	40.066945°	-85.886816°



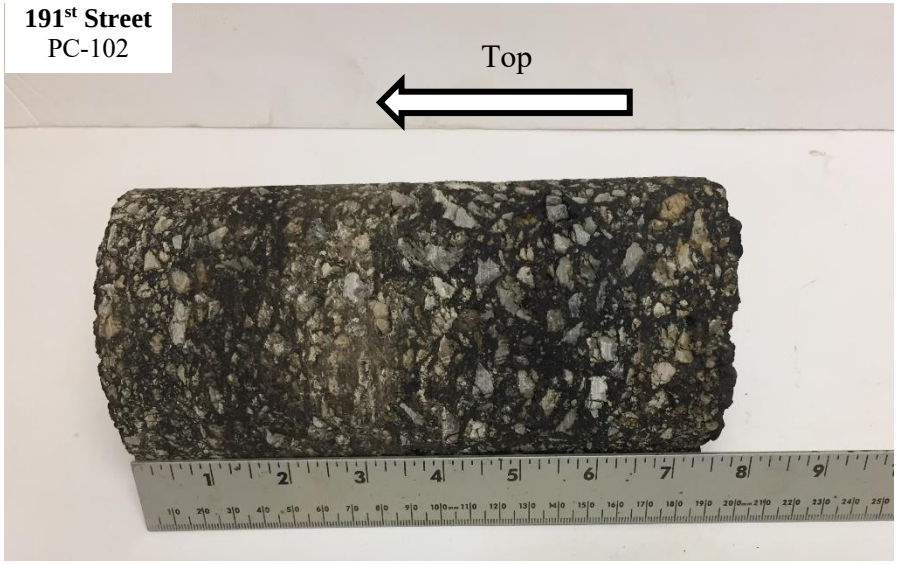
Pavement Core (PC-101)

Subbase (PC-101)

Pavement Type	Depth (inches)
Surface Course	0.0”- 0.75”
Intermediate Course	0.75”- 8.0”
Subbase Type: Gravel and Sand	

GEOTILL ENGINEERING, INC.

Core	Route	Lane	Core Diam.	Latitude	Longitude
PC-102	191st Street	Driving East	4”	40.066950°	-85.885232°



Pavement Core (PC-102)

Subbase (PC-102)

Pavement Type	Depth (inches)
Surface Course	0.0”- 0.75”
Intermediate Course	0.75”- 8.5”
Subbase Type: Gravel and Sand	

APPENDIX C

CALCULATIONS FOR SPREAD FOOTINGS BEARING CAPACITY
BEARING CAPACITY SETTLEMENT ANALYSES
Option-1 The Footing Base at El.800 (on Soil)
Option-2 The Footing Base at El.797 (on Rock)

APPENDIX C (Continued)

Option-1 The Footing Base at El.800 (on Soil)

SOIL BEARING CAPACITY ANALYSIS
(Refer to TB-101 & TB-102)

Structure No.:	23017
Project Name:	Proposed Small Structure Replacement on 191st over unnamed Tributary of Stony creek
Location.:	Hamilton County, Indiana, 1000' west of the intersection of 191st Street and Cyntheanne Road
Project. No.:	1863-2016-90
Geotill No.:	112028301

DATA

1. The flowline will be at El. 806.25
2. The Auger Refusal At El. 797
3. Based on plans the bottom of footings will be at **El. 801.25 to 803.26**

SOIL BEARING RESISTANCE

1. Footings would be founded on Silty Clay and Weathered Shale :

   Estimated Phi = 0 deg., Q = 7,500 psf, G = 125 pcf & G_{sub} = 125 - 62.4 = 62.6 pcf

2. Groundwater is expected to be above footings (longterm) .

Say Qu = 7,500 psf Footings will be over stiff to very stiff sitly clay
Cu = 3,750 psf

For Phi = 0, Nc = 5.14

Nominal Bearing Resistance, Qn = c Nc = 19275

Nominal Bearing Resistance, **Use Qn = 19,275 psf**

Resistance Factor, ϕ = **0.45**

Factored Bearing Resistance (Qf) = Qn x ϕ = 8674 **Use Qf = 8,600 psf**

SETTLEMENT ANALYSIS
(Refer to Borings TB-101 & TB-102)

Structure No. : 23017
Project Name: Proposed Small Structure Replacement on 191st over unnamed Tributary of Stony creek
Location.: Hamilton County, Indiana, 1000' west of the intersection of 191st Street and Cyntheanne Road
Project. No.: 1863-2016-90
GEOTILL No.: 112028301

DATA

Flowline Elevation (E1) = 806.3
Depth of Footings (D), feet = 3.0
Bottom Footing Elevation (E2) = 803.3

Delta S = H [C_c / (1+ e_o)] log [((Po + Delta P) / Po)] — Normally Consolidated
Delta S = H [C_r / (1+ e_o)] log [((Po + Delta P) / Po)] — Overconsolidated with $P_F < P_c$
Delta S = H [C_c / (1+ e_o)] log [((Po + Delta P) / Pc)]+H [C_r / (1+ eo)] log [((Pc) / Po)] — OC with $P_o < P_c < P_F$
Delta S= H [(1 / BCI)] log [(Po + Delta P) / Po)] — Cohesionless

Soil Layer	Above Footings	A	B	C	D
Soil Type	Silty Clay	Silty Clay	Silty Clay		
Strata Top Elevation (E1)	806.3	803.3	798.5		
Strata Bottom Elevation (E2)	803.3	798.5	797		
Soil Strata Thickness (H = E1-E2)), feet	3.0	4.8	1.5		
Midpoint Elevation (E3 = E1-H/2)	---	800.9	797.8		
Total Depth to Midpoint (d = E1-E3), feet	---	5.4	8.5		
Depth from Bottom Elevation to Midpoint (Z), feet		2.38	5.50		

Moisture Content, w		14	10		
Specific Gravity, Gs	2.65	2.65	2.65		
Soil Total Unit Weight (d), pcf	125.0	125	125		
Effective Soil Unit Weight (d'), pcf	62.6	62.6	62.6		
Liquid Limit, LL	29	20	19		
Plastic Limit, PL	17	13	14		
Average Blowcounts, N	11	32	50		
Average Corrected Blowcount, N160	26.3	68.2	96.3		

Void Ratio, eo = (Gs * w) / 100	---	0.371	0.265		
Compression Index, Cc* = 0.156*eo + 0.0107	---	0.069	0.052		
Compression Index, Cr* = w / 1000	---	0.014	0.010		
Preconsolidation Pressure, Pc (psf)*	---	**18000**	**28000**		
BCI' (FHWA)	---	---	---		
Overburden Pressure, Po (psf)	188	336	532		

Soil parameters eo, Cc, Cr, OCR and C' were estimated using FHWA-NHI-05-123 and FHWA-06-088 and consolidation testing.

Settlement Calculation

Footing Width (B), feet = 2.0 **Nominal Resistance (Qn), psf = 19,275**

Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.48	0.23		
Pressure Increase, Delta P = Qn x I		9279	4365		
Settlement/Layer (inches)		0.85	0.14		
Estimated Total Settlement (inches)					**0.98**

0.0

Footing Width (B), feet = 2.0 **Nominal Resistance (Qn), psf = 3366**

Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.48	0.23		
Pressure Increase, Delta P = Qn x I		1620	762		
Settlement/Layer (inches)		0.45	0.05		
Estimated Total Settlement (inches)					**0.50**

Footing Width (B), feet = 2.0 **Nominal Resistance (Qn), psf = 20289**

Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.48	0.23		
Pressure Increase, Delta P = Qn x I		9767	4595		
Settlement/Layer (inches)		0.86	0.14		
Estimated Total Settlement (inches)					**1.00**

Footing Width (B), feet = 2.0 **Nominal Resistance (Qn), psf = 47162**

Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.48	0.23		
Pressure Increase, Delta P = Qn x I		22703	10682		
Settlement/Layer (inches)		1.31	0.19		
Estimated Total Settlement (inches)					**1.50**

Settlement Calculation

Footing Width (B), feet = 3.0 **Nominal Resistance (Qn), psf = 19275**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.65	0.33		
Pressure Increase, Delta P = Qn x I		12452	6380		
Settlement/Layer (inches)		0.92	0.16		
Estimated Total Settlement (inches)					**1.08**

Footing Width (B), feet = 3.0 **Nominal Resistance (Qn), psf = 2476**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.65	0.33		
Pressure Increase, Delta P = Qn x I		1600	820		
Settlement/Layer (inches)		0.44	0.06		
Estimated Total Settlement (inches)					**0.50**

Footing Width (B), feet = 3.0 **Nominal Resistance (Qn), psf = 14881**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.65	0.33		
Pressure Increase, Delta P = Qn x I		9614	4926		
Settlement/Layer (inches)		0.86	0.14		
Estimated Total Settlement (inches)					**1.00**

Footing Width (B), feet = 3.0 **Nominal Resistance (Qn), psf = 35005**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.65	0.33		
Pressure Increase, Delta P = Qn x I		22614	11587		
Settlement/Layer (inches)		1.31	0.19		
Estimated Total Settlement (inches)					**1.50**

Settlement Calculation

Footing Width (B), feet = 4.0 **Nominal Resistance (Qn), psf = 19275**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.76	0.43		
Pressure Increase, Delta P = Qn x I		14634	8218		
Settlement/Layer (inches)		0.96	0.17		
Estimated Total Settlement (inches)					**1.13**

Footing Width (B), feet = 4.0 **Nominal Resistance (Qn), psf = 2078**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.76	0.43		
Pressure Increase, Delta P = Qn x I		1577	886		
Settlement/Layer (inches)		0.44	0.06		
Estimated Total Settlement (inches)					**0.50**

Footing Width (B), feet = 4.0 **Nominal Resistance (Qn), psf = 12448**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.76	0.43		
Pressure Increase, Delta P = Qn x I		9451	5308		
Settlement/Layer (inches)		0.85	0.15		
Estimated Total Settlement (inches)					**1.00**

Footing Width (B), feet = 4.0 **Nominal Resistance (Qn), psf = 29660**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.76	0.43		
Pressure Increase, Delta P = Qn x I		22519	12646		
Settlement/Layer (inches)		1.30	0.20		
Estimated Total Settlement (inches)					**1.50**

Settlement Calculation

Footing Width (B), feet = 5.0 **Nominal Resistance (Qn), psf = 19275**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.83	0.51		
Pressure Increase, Delta P = Qn x I		16079	9855		
Settlement/Layer (inches)		0.98	0.18		
Estimated Total Settlement (inches)					**1.17**

Footing Width (B), feet = 5.0 **Nominal Resistance (Qn), psf = 1865**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.83	0.51		
Pressure Increase, Delta P = Qn x I		1556	953		
Settlement/Layer (inches)		0.44	0.06		
Estimated Total Settlement (inches)					**0.50**

Footing Width (B), feet = 5.0 **Nominal Resistance (Qn), psf = 11145**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.83	0.51		
Pressure Increase, Delta P = Qn x I		9297	5698		
Settlement/Layer (inches)		0.85	0.15		
Estimated Total Settlement (inches)					**1.00**

Footing Width (B), feet = 5.0 **Nominal Resistance (Qn), psf = 26885**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.83	0.51		
Pressure Increase, Delta P = Qn x I		22427	13745		
Settlement/Layer (inches)		1.30	0.20		
Estimated Total Settlement (inches)					**1.50**

Settlement Calculation

Footing Width (B), feet = 6.0 **Nominal Resistance (Qn), psf = 19275**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.88	0.59		
Pressure Increase, Delta P = Qn x I		17029	11282		
Settlement/Layer (inches)		1.00	0.19		
Estimated Total Settlement (inches)					**1.19**

Footing Width (B), feet = 6.0 **Nominal Resistance (Qn), psf = 1739**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.88	0.59		
Pressure Increase, Delta P = Qn x I		1536	1018		
Settlement/Layer (inches)		0.43	0.07		
Estimated Total Settlement (inches)					**0.50**

Footing Width (B), feet = 6.0 **Nominal Resistance (Qn), psf = 10370**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.88	0.59		
Pressure Increase, Delta P = Qn x I		9162	6070		
Settlement/Layer (inches)		0.84	0.16		
Estimated Total Settlement (inches)					**1.00**

Footing Width (B), feet = 6.0 **Nominal Resistance (Qn), psf = 25293**
Length of Footing (L), feet = 67.0

Soil Layer	Above Footings	A	B	C	D
Influence Factor, I (Boussinesq)		0.88	0.59		
Pressure Increase, Delta P = Qn x I		22346	14805		
Settlement/Layer (inches)		1.29	0.21		
Estimated Total Settlement (inches)					**1.50**

SUMMARY

Service Limit State at 0.5-inch Settlement

B	Nominal Bearing Resistance, psf
2.0	3366
3.0	2476
4.0	2078
5.0	1865
6.0	1739

Service Limit State at 1.0-inch Settlement

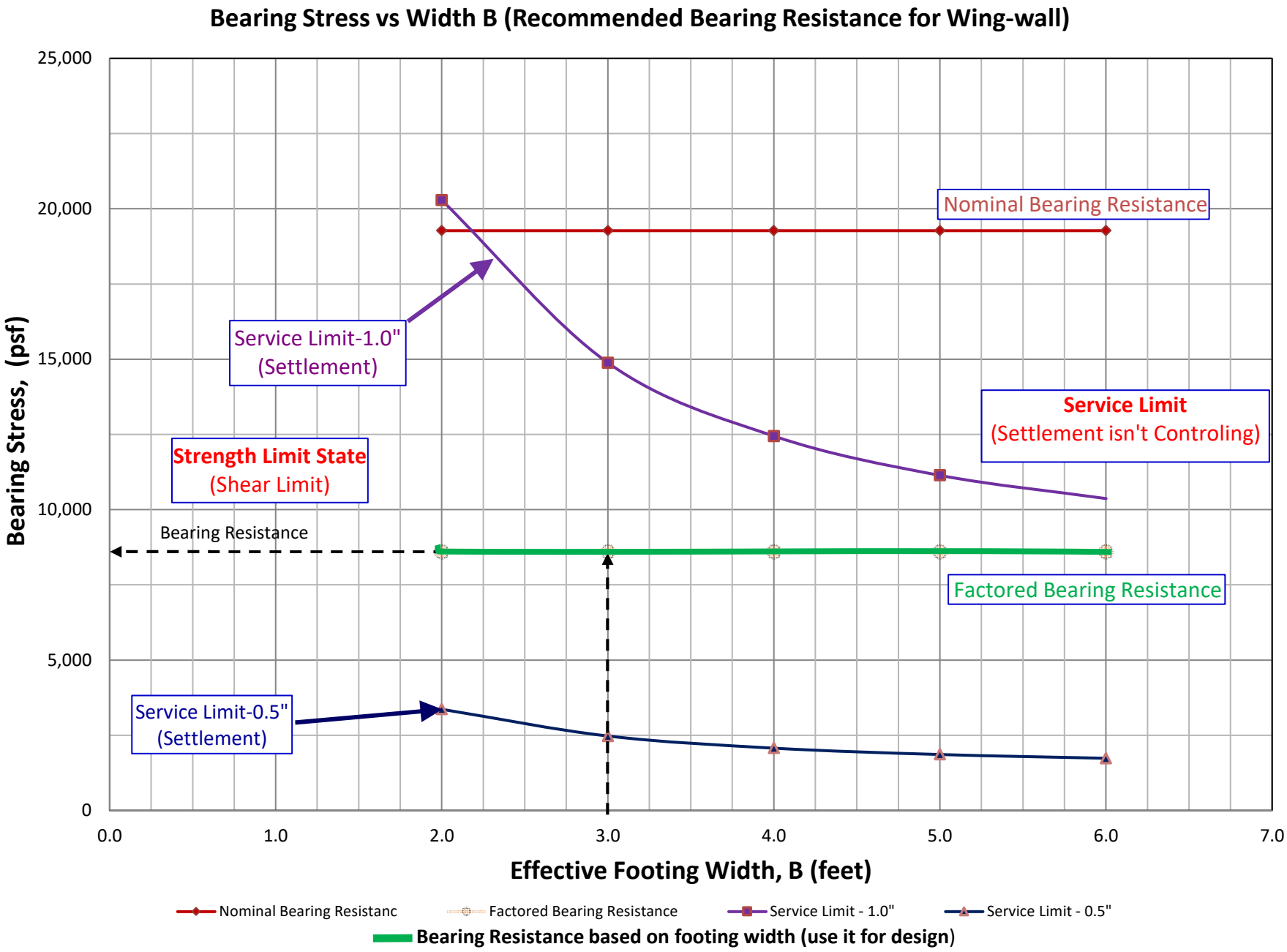
B	Nominal Bearing Resistance, psf
2.0	20289
3.0	14881
4.0	12448
5.0	11145
6.0	10370

Service Limit State at 1.5-inch Settlement

B	Nominal Bearing Resistance, psf
2.0	47162
3.0	35005
4.0	29660
5.0	26885
6.0	25293

Strength Limit State

B	Nominal Bearing Resistance, psf
2.0	19,275
3.0	19,275
4.0	19,275
5.0	19,275
6.0	19,275


Bearing Stress vs Width B (Recommended Bearing Resistance for Wing-wall)
25,000
20,000
15,000
10,000
5,000
0
Bearing Stress, (psf)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
Effective Footing Width, B (feet)
Nominal Bearing Resistance
Service Limit-1.0"
(Settlement)
Service Limit
(Settlement isn't Controling)
Strength Limit State
(Shear Limit)
Bearing Resistance
Factored Bearing Resistance
Service Limit-0.5"
(Settlement)
Nominal Bearing Resistanc
Factored Bearing Resistance
Service Limit - 1.0"
Service Limit - 0.5"
Bearing Resistance based on footing width (use it for design)

APPENDIX C (Continued)

Option-2 The Footing Base at El.797 (on Rock)

ROCK NOMINAL BEARING RESISTANCE
(Refer to TB-101 &TB-102)

Structure No.:	23017
Project:	Proposed Small Structure Replacement on 191st over unnamed Tributary of Stony creek
Location.:	Hamilton County, Indiana, 1000' west of the intersection of 191st Street and Cyntheanne Road
Project No.:	1863-2016-90
Geotill No.:	112028301

DATA

1. The flowline will be at El. 806.25
2. Compressive Strength of the weathered shale rock is estimated at 80 psi
3. Groundwater is expected to be above the Rock Elevation.
4. The bottom of footings will be at El. 797 (rock elevation) , 3 feet of soil should be removed
5. Assumed Parameters:

Width of Footings, B =	2.0	feet	
Depth of Footings, $D_{f=}$	5.0	feet	
Total Unit Weight of Soil, γ =	135.0	pcf	
Water Unit Weight, γ_w =	62.4	pcf	
Depth of Water, D_w =	0.0	feet	(Flowline)
Depth of Rock, D_r =	9.3	feet	(average below flowline)

ROCK NOMINAL BEARING RESISTANCE

Using LRFD method following FHWA-NHI-05-094 (January 2007) publications.

From Table 3.1.2b on Page 3.1.11

Parameter	Value	Relative Rating
Strength of intact rock	200 psi = 28.8 ksf	0
Drill core quality RQD	<25%	3
Spacing of joints	2 in - 1 ft	10
Condition of joints	Slightly rough surface Joints open 0.05 - 0.2 in	4
Groundwater conditions	<400 gallons/hr	7
Rock Mass Rating (RMR)		**24**

Poor Rock (AASHTO 2008 Table 10.4.6.4-3)

q_u =	80	psi	(assumed)	
σ'_n =	671.55	psf =	4.7	psi

ROCK NOMINAL BEARING RESISTANCE
(Refer to TB-101 &TB-102)

Structure No.:	23017
Project:	Proposed Small Structure Replacement on 191st over unnamed Tributary of Stony creek
Location.:	Hamilton County, Indiana, 1000' west of the intersection of 191st Street and Cyntheanne Road
Project No.:	1863-2016-90
Geotill No.:	112028301

Section 10.6.3.2.2AASHTO LRFD Bridge Design Specifications (2014)
Nominal Bearing Resistance, q_n

$q_n = 2.5\ q_u$

200 psi **14** tsf

Use qn = 20 tsf . From FHWA NHI-06-089, Presumptive Allowable Bearing Pressure, Table 8-9 on Page 8-43

Nominal Bearing Resistance, **Use Qn = 14.4 tsf**

Resistance Factor, ϕ = **0.45**

Factored Bearing Resistance (Qf) = Qn x ϕ = 6.48 **Use Qf = 6.5 tsf**

APPENDIX C

Bridge Asbestos Report

REPORT OF ASBESTOS INSPECTION

SMALL STRCTURE REPLACEMENT
HAMILTON COUNTY SS-23017
191st STREET OVER UNNAMED TRIBUTARY STONY CREEK
HAMILTON COUNTY, INDIANA

PREPARED FOR:

HAMILTON COUNTY BOARD OF COMMISSIONERS
1700 S. 10th STREET
NOBLESVILLE, INDIANA 46060

PREPARED BY:

DLZ INDIANA, LLC
157 E. MARYLAND STREET
INDIANAPOLIS, IN 46204

DLZ NO.: 1863-2016-90

MARCH 15, 2019

DLZ
ENGINEERS • ARCHITECTS • SCIENTISTS
PLANNERS • SURVEYORS

REPORT OF ASBESTOS INSPECTION

SMALL STRCTURE REPLACEMENT
HAMILTON COUNTY SS-23017
191st STREET OVER UNNAMED TRIBUTARY STONY CREEK
HAMILTON COUNTY, INDIANA

Prepared For:

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1700 S. 10th STREET
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Prepared By:

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157 E. MARYLAND STREET
INDIANAPOLIS, IN 46204

DLZ NO.: 1863-2016-90

MARCH 15, 2019

Report of Asbestos Inspection
Hamilton County SS-23017
191st Street over Unnamed Tributary Stony Creek
Hamilton County, Indiana

March 15, 2019

TABLE OF CONTENTS

APPENDICES

Report of Asbestos Inspection
Hamilton County SS-23017
191st Street over Unnamed Tributary Stony Creek
Hamilton County, Indiana

March 15, 2019

1.0 INTRODUCTION

DLZ was retained by the Hamilton County Board of Commissioners to conduct an asbestos inspection for the project involving the replacement of SS-23017. This small structure carries 191st Street over Unnamed Tributary Stony Creek. The location of the above structure is depicted on Figure 1, Appendix 1.

2.0 PURPOSE

The above bridge structure is subject to the facility requirements of the Federal National Emission Standard for Hazardous Air Pollutants (NESHAP) asbestos regulations contained in the Code of Federal Regulations, Title 40, Part 61, Subpart M, (40 CFR 61, Subpart M). The NESHAP regulations require an accredited asbestos inspector to thoroughly inspect the affected facility or the part of the facility where demolition will occur for the presence of asbestos. This includes Category I non-friable and Category II non-friable asbestos containing materials. All regulated asbestos containing materials (RACM) are required to be removed prior to any demolition and/or renovation operations that may result in the disturbance of these materials. The purpose of this Report of Asbestos Inspection is to document the location, quantity and condition of all asbestos containing materials (ACM) that were identified during the asbestos inspection so these materials can be properly handled prior to and during the demolition.

3.0 METHODOLOGY

DLZ conducted the asbestos inspection on March 12, 2019 using an Indiana Department of Environmental Management (IDEM) accredited Asbestos Inspector. DLZ's inspector, Mr. Daniel Stevens, has an IDEM Accreditation Number #19A003455 expiring on March 3, 2020.

DLZ's inspection methodology included the following:

Inspection of the structure for potentially friable and non-friable ACM, delineation of the homogeneous areas (materials that are uniform in color and texture), and the procurement of bulk samples from suspect materials. Samples were only collected from visible, suspect friable ACM and non-friable ACM.

A. Documentation of the inspection process using the Asbestos Inspection Logs that indicate the sample identification number, the sample location, the sample description, the friability of the sample, the sample condition and other comments regarding the suspect ACM bulk sample.

B. Completion of a chain-of-custody form documenting the sample transport process, and the submittal of the samples to ACM Engineering & Environmental Services in South Bend, Indiana for asbestos analysis.

C. Analysis of potential ACM containing bulk samples by ACM Engineering & Environmental Services, an approved National Voluntary Laboratory Accreditation Program (NVLAP) laboratory, having a NVLAP code of 101977. Bulk sample analysis was conducted by the Polarized Light Microscopy (PLM) methodology in accordance with the U.S. EPA Method 600/R-39/116.

D. Bulk sample results are compared to the NESHAP criteria as defined in 40 CFR 61, Subpart M. NESHAP defines an asbestos containing material as any material that contains greater than 1%

E. A summary of the limitations of the Asbestos Inspection Report are contained in Appendix 2.

4.0 RESULTS

Hamilton County SS-23017

DLZ performed an asbestos inspection of Hamilton County SS-23017 that carries 191st Street over Unnamed Tributary Stony Creek. No suspect asbestos containing homogenous areas were identified. Therefore, no bulk samples were collected or analyzed.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the asbestos inspection of Hamilton County SS-23017 that carries 191st

Street over Unnamed Tributary Stony Creek, no visually observed asbestos containing materials were identified.

6.0 SIGNATURE OF ASBESTOS INSPECTOR

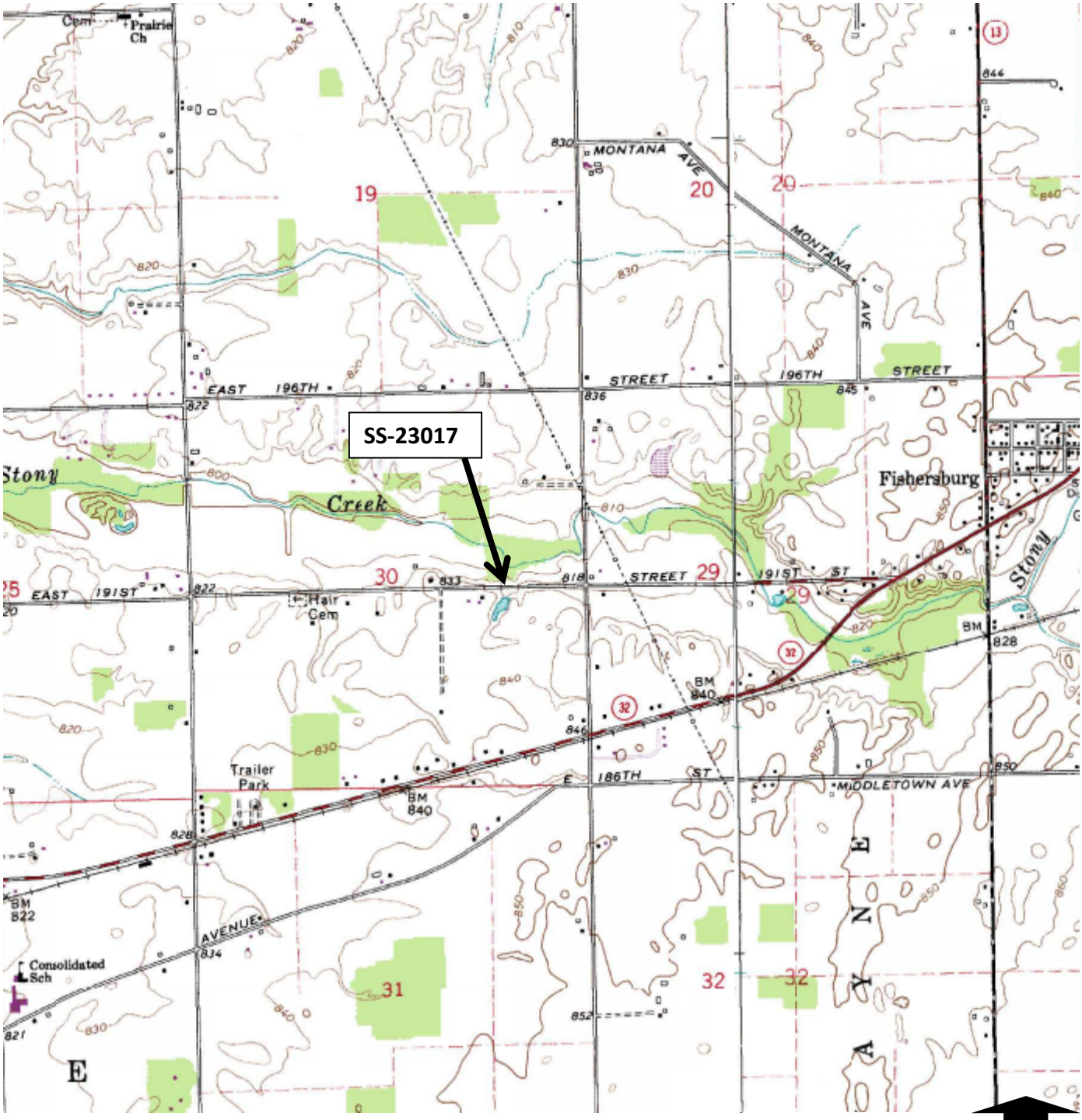
The IDEM Accredited Asbestos Inspector responsible for this report is noted as follows:

Daniel J. Stevens
Asbestos Inspector, IDEM # 19A003455

APPENDIX 1

FIGURE

Site Location Map



Lapel and Riverwood, Indiana 7.5 Minute Quadrangle

Source - http://gisdb.uits.indiana.edu/singlefile/map/IN24k_quad_index_1160_m10000.html

Map Compiled: 2/7/2019

DLZ	**ASBESTOS INSPECTION REPORT** Hamilton County SS-23017 191st Street over Unnamed Tributary Stony Creek Hamilton County, Indiana	Scale: 1"=2000' Figure: 1

APPENDIX 2

LIMITATIONS

LIMITATIONS

The asbestos inspection included only the sampling and quantification of all visible suspect asbestos containing materials accessible from the top of the bridge and from the bank along and underneath the structure at the abutment walls.

The results of this inspection are based on the condition of the structures and the materials on the date on this inspection. Any change in these conditions may result in different recommendations.

APPENDIX D

Permits

Permits

Section 1: Rule 5 – Notice of Sufficiency

Section 2: Section 404 – U.S. Army Corps of Engineers

Section 3: Section 401 – Indiana Department of Environmental Management

Section 1:
Rule 5 – Notice of Sufficiency

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

September 23, 2020

65-42 WQS/RJB
Faraz Khan, Hamilton County Board of Commissioners
1700 S 10th St
Noblesville, IN 46060

Dear Faraz Khan, Hamilton County Board of Commissioners:

Re: **Notice of Sufficiency (NOS)**
Notice of Intent Submittal
Construction Site Stormwater Run-off
327 IAC 15-5
Replacement of Structure No. 23017, 191st Street over Unnamed Tributary of Stony Creek
Hamilton County
Permit #: INRA06211

The Notice of Intent (NOI) submitted for the project referenced above has been reviewed by staff of the Indiana Department of Environmental Management (IDEM). The items contained in the NOI are sufficient and meet the requirements of the National Pollutant Discharge Elimination System (NPDES) General Permit Rule for stormwater discharges associated with construction activity (327 IAC 15-5). This letter is notification of permit coverage for 327 IAC 15-5 and does not constitute approval to conduct activities that are related to other local, state, or federal permits.

A permit number is assigned to each project for which an NOI has been submitted to obtain coverage under 327 IAC 15-5. This number is used for identification and should be included with any future correspondence submitted to IDEM. The general permit number assigned to this facility is: INRA06211.

Construction site stormwater run-off general permit coverage is automatically limited to a maximum term length of five (5) years (327 IAC 15-5-12). The general permit issued for the project referenced above will expire on September 17, 2025. If this project requires coverage beyond this date, the applicant must reapply for a new permit 90 days prior to the expiration date.

It is important that all activities associated with your site are in compliance with the requirements of 327 IAC 15-5 and all local stormwater permits. In accordance with 327 IAC 15-5-10, you are required, at a minimum to implement your construction /stormwater pollution prevention plan, implement and maintain all stormwater quality measures, and monitor the effectiveness of the measures until the project is complete and terminated.

Upon completion of the project, you are required to terminate the permit. Information for termination can be found in 327 IAC 15-5-8. If this project is also within and/or permitted through a Municipal Separate Storm Sewer System (MS4), there may be local requirements (established through a local ordinance) for approval to terminate a project. If an MS4 has adopted a requirement for termination, you are responsible to comply with all local provisions prior to submitting the Notice of Termination to IDEM.

For more information related to the Stormwater Program and permit requirements, please visit: http://www.idem.IN.gov/2331.htm. Program forms are also available at this website or at http://www.IN.gov/idem/5157.htm.

Permittees can now manage their construction site stormwater run-off permit activities on-line, including renewals, amendments, and terminations through the IDEM Regulatory ePortal. All permittees are required/encouraged to utilize this new service. The service may be accessed at https://stormwater.idem.in.gov .

Any questions regarding this letter may be directed to the Stormwater Permit Coordinator at 317-233-1864 or 800-451-6027, extension 1864. Questions may also be emailed to the program email account of Stormwat@idem.IN.gov.

Sincerely,

Randy J. Braun, CPESC, CMS4S
Stormwater and Wetlands Section
Surface Water, Operations, & Enforcement Branch
Office of Water Quality

Section 2:
Section 404 – U.S. Army Corps of Engineers

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, LOUISVILLE DISTRICT
INDIANAPOLIS REGULATORY OFFICE
8902 OTIS AVENUE, SUITE S106B
INDIANAPOLIS, IN 46216

August 31, 2020

Regulatory Division
North Branch
ID No. LRL-2020-727-sjk

Mr. Faraz Khan
Hamilton County Commissioners
1700 South 10th Street
Noblesville, Indiana 46060

Dear Mr. Khan:

This is regarding electronic correspondence dated August 27, 2020, from DLZ Indiana concerning the proposed replacement of the structure carrying 191st Street over an unnamed tributary to Stony Creek and installation of riprap scour protection. The project is located at latitude 40.0669° and longitude -85.8856°, Noblesville, Hamilton County, Indiana. We have reviewed the submitted data relative to Section 404 of the Clean Water Act (CWA).

The Louisville, Detroit, and Chicago Districts issued Regional General Permit (RGP) No. 1 pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 CWA on December 15, 2019, for certain activities having minimal impact in Indiana. We have verified that the proposed project, is considered to have minimal adverse impact to the aquatic environment and is within the provisions of the RGP. Compliance with the enclosed RGP General Conditions and the Section 401 Water Quality Certification (WQC) issued by the Indiana Department of Environmental Management dated December 3, 2019, is required. You must comply with any conditions imposed in the WQC as it is part of your RGP authorization.

The enclosed compliance certification document must be completed and submitted to this office within 30 days of completion of the authorized activity. **This verification is valid until December 15, 2024.**

If you have any questions concerning this matter, please contact me at the above address or by calling 317-543-9424. Any correspondence on this matter should refer to our ID Number LRL-2020-727-sjk.

Sincerely,

Date: 2020.08.31 10:46:42 -04'00'

Sarah Keller
Regulatory Specialist
Indianapolis Regulatory Office

Enclosures
Copy Furnished: IDEM (Farren)
DLZ (LaTurner)

Compliance Certification

Permit Number: LRL-2020-727-sjk

Name of Permittee: Hamilton County Commissioners

Agent: DLZ Indiana, LLC

Date of Issuance: August 31, 2020

Within 30 days of completion of the authorized activity or implementation of any required compensatory mitigation (whichever occurs later), sign this certification and return it to the following address:

USACE - Louisville District
Indianapolis Regulatory Office
8902 Otis Ave., Suite S106B
Indianapolis, IN 46216

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

_____ _____

Signature for Permittee (Faraz Khan) Date

2019 INDIANA REGIONAL GENERAL PERMIT NO. 1 EXCERPT

C. Excluded Activities

1. Activities that are denied any required local, State, or Federal authorization.

2. Activities that the Districts determine to have the potential to cause unacceptable adverse impacts on aquatic resources or other public interest factors. The Districts may, on a case-by-case basis, require an Individual Department of the Army (DA) permit. The Districts will notify the applicant that the project does not qualify for the RGP and instruct the applicant on the procedures to seek authorization under a standard Individual DA permit. The Districts may also require an Individual DA permit for any After-the-Fact application and/or any unauthorized activity regardless of whether or not the loss of waters meets the upper threshold limitation of 1.0 acre of impacts to wetlands, 1,500 linear feet (not to exceed 1.0 acre) of stream impacts, or 2 acres of open water impacts.

D. Maximum Limitations

The following impact limitations apply to all activities authorized by the RGP, with the exception of bank stabilization, boat ramps, agricultural activities, and mining activities. For impact limitations pertaining to these activities, see the "Activity Categories and Conditions" section of this document for further discussion regarding maximum limitations;

1. Loss of waters of the United States (U.S.), including wetlands, is limited to 1.0 acre or less. However, loss of open waters (excluding natural waterbodies) is limited to 2.0 acres or less. Open waters includes ponds, impoundments, and borrow/mined pits;
2. Loss of waters of the U.S. is limited to 1,500 linear feet of stream channel, not to exceed 1.0 acre;
3. Dredging in navigable waters is limited to 10,000 cubic yards;
4. Structures and fills for docking and mooring are limited to similar permitted structures and fills in the vicinity; and
5. "Piecemealing" of projects in order to meet these thresholds will not be allowed.

RESTRICTIONS: The work authorized by this RGP would also be subject to the attached General Conditions (see Appendix 1) and any other Special Conditions necessary to reduce impacts to the minimum level.

E. Mitigation Requirements

The District Engineer may determine that the adverse effects of the proposed activity are minimal, and require no mitigation. Otherwise, mitigation will be required as follows, with the exception of bank stabilization, minor discharges, excavation, and agricultural activities (see "Activity Categories and Conditions" section of this document for further discussion regarding mitigation requirements).

1. Impacts resulting from the loss of waters by relocation, encapsulation, or channelization of greater than 300 linear feet of ephemeral, intermittent, or perennial stream shall require mitigation;
2. The loss of greater than 0.10 acre of special aquatic sites (including wetlands) and/or loss of waters of the U.S. causing more than minimal effects shall require mitigation;
3. Other work or structures in waters of the United States will be evaluated on a case-by-case basis and may require mitigation to reduce the impacts to minimal levels;
4. Any required compensatory mitigation must meet the standards set forth in Title 33 CFR Parts 325 and 332, Compensatory Mitigation for Losses of Aquatic Resources, as published April 10, 2008 in the Federal Register, Vol. 73, No. 70, and any district guidance.
5. If the proposed project will result in more than minimal adverse environmental effects, the District Engineer will require the applicant to submit a mitigation proposal, which must comply with Corps of Engineers compensatory mitigation regulations and guidance.

F. Agency Contact Information (see IN RGP published 12/12/2019, effective 12/15/19)

G. Information Requirements (see IN RGP published 12/12/2019, effective 12/15/19)

H. Implementation Procedure (see IN RGP published 12/12/2019, effective 12/15/19)

I. Activity Categories and Notifications

BANK STABILIZATION ACTIVITIES

This activity includes bank stabilization necessary for erosion prevention. The District Engineer may require mitigation for this activity on a case-by-case basis.

1. The proposed bank stabilization activity shall be justified based on a demonstrated need for erosion prevention. This category does not include maintenance activities.

2. Proposed fill is limited to two (2) cubic yards per running foot, unless the District Engineer waives this criterion or the RGP linear foot limitation by making a written determination concluding that the discharge will result in minimal adverse effects on the aquatic environment. EPA and IDEM will be notified by the Corps that the RGP linear foot and/or cubic yards per foot limitation has been waived.

3. The District Engineer will decide, on a case-by-case basis, if projects involving the use of vegetative and biotechnical practices will be subject to length restrictions. Biotechnical practices are defined as bank stabilization practices that benefit the aquatic environment by incorporating organic materials to produce functional structures, provide wildlife habitat, and provide areas for revegetation. Examples of biotechnical practices include, but are not limited to: a) adequately sized riprap or A-Jack structures keyed into the toe of the slope with native plantings on the banks above; b) vegetated geogrids; c) coconut fiber (coir) logs; d) live, woody vegetative cuttings, fascines or stumps; e) brush layering; and f) soil lifts.

4. Riprap shall not be placed at a steeper slope than 2:1 (2 horizontal to 1 vertical) for dumped riprap, and 1.5:1 for hand placed riprap.

5. Bank stabilization shall be constructed using clean fill materials. The following materials may be used: rock, quarry stone, fieldstone, clay, granular fill, broken concrete, steel or vinyl sheet piling, cellular blocks, fabric formed concrete, concrete filled fabric mats, gabion baskets, rock and wire mattresses, sand/cement filled bags, geotechnical fabric materials, non-invasive vegetation, and treated timber. If broken concrete is used, it must be free from asphalt and oils, in addition all protruding material such as reinforced rods shall be cut flush with the surface of the concrete and removed from the construction area.

6. All material utilized shall be properly sized or anchored to resist anticipated forces of wave action.

Notification: The permittee shall submit a pre-construction notification to the District Engineer prior to commencing the activity if the bank stabilization activity: (1) Involves discharges into special aquatic sites, including wetlands; or (2) is in excess of 300 feet in length; or (3) will involve the discharge of greater than an average of one cubic yard per running foot as measured along the length of the treated bank, below the plane of the ordinary high water mark.

TRANSPORTATION PROJECTS

This activity includes the construction, expansion, modification or improvement of linear transportation projects including roads, bridges, runways and taxiways, bike/pedestrian pathways, and railroads. Temporary structures, fills, and work necessary to construct linear transportation projects are also included.

1. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

2. Crossings of waterways and/or wetlands must be culverted, bridged, or otherwise designed to prevent the restriction of expected high water flows. The crossing must be designed as to not impede low water flows or the safe passage of fish and aquatic organisms.

Notification: The permittee must submit a pre-construction notification to the District Engineer prior to commencing the activity if: (1) The loss of waters of the United States exceeds 1/10-acre; or (2) there is a discharge in a special aquatic site, including wetlands.

RESIDENTIAL, COMMERCIAL, INSTITUTIONAL, INDUSTRIAL AND RECREATIONAL DEVELOPMENTS

Activities include the construction or expansion of a single residence, a multiple unit residential development, a residential subdivision, commercial and institutional buildings, and recreational facilities. Attendant features may include but are not limited to roads, parking lots, garages, yards, infrastructure and utility lines, storm water management facilities, septic fields, and recreation facilities such as playgrounds, playing fields, golf courses, hiking trails, bike paths, horse paths, nature centers and campgrounds. The maximum impact limitations will be applied on a cumulative basis for activities that are part of a larger common plan of development or sale.

Notification: The permittee must submit a pre-construction notification to the District Engineer prior to commencing the activity.

BOAT RAMPS

Activities required for the construction of boat ramps.

1. The proposed boat ramp shall not exceed 60 feet in width, unless the District Engineer waives this criterion by making a written determination concluding that the discharge will result in minimal adverse effects on the aquatic environment. EPA and IDEM will be notified by the Corps that the RGP maximum width limitation has been waived. Boat ramps should be constructed of crushed stone, concrete, gravel, or other suitable material. Boat ramps constructed of asphalt are not authorized under this permit.

Notification: The permittee must submit a pre-construction notification to the District Engineer prior to commencing the activity if: (1) The discharge into waters of the United States exceeds 50 cubic yards, or (2) the boat ramp exceeds 20 feet in width.

MINOR DISCHARGES AND EXCAVATION ACTIVITIES

Activities include minor discharges of dredged or fill material into waters of the U.S. and reshaping of existing drainage ditches. The District Engineer may require mitigation for this activity on a case-by-case basis.

1. Projects involving the grading or reshaping of existing drainage ditches may not increase the slope of the ditch banks, the drainage capacity, nor can they expand the area drained by the ditch (as originally constructed).

2. All dredged/excavated materials will be disposed of in upland location(s) landward of the OHWM with no placement in, or return to, any waterway or wetland. Any excess material that cannot be accommodated on the permittee's upland property shall be placed in an upland location without any return to a waterway or wetland.

Notification: The permittee must submit a pre-construction notification to the District Engineer prior to commencing the activity if: (1) The discharge or the volume of material excavated exceeds 10 cubic yards below the plane of the ordinary high water mark or the high tide line, or (2) the discharge is in a special aquatic site, including wetlands.

AGRICULTURAL ACTIVITIES

Agricultural activities including the construction of building pads for farm buildings; installation, placement or construction of drainage tiles, ditches or levees; the relocation of existing serviceable drainage ditches constructed in waters of the U.S.; and similar activities. The District Engineer may require mitigation on a case-by-case basis, and may waive the RGP linear foot limitation by making a written determination concluding that the discharge will result in minimal adverse effects on the aquatic environment. EPA and IDEM will be notified by the Corps that the RGP linear foot limitation has been waived. This RGP does not affect those agricultural activities that are exempt in accordance with 33 CFR Part 323.4, or are exempt under CWA Section 404(f)(1)(A).

Notification: The permittee must submit a pre-construction notification to the District Engineer prior to commencing the activity.

MINING ACTIVITIES

Mining activities are authorized under this category, except for coal mining activities. This RGP does not affect those mining activities that are exempt in accordance with 33 CFR Part 323.4.

1. The District Engineer may waive the RGP linear foot and cubic yards per foot of fill limitation by making a written determination concluding that the discharge will result in minimal adverse effects on the aquatic environment. EPA and IDEM will be notified by the Corps that the RGP linear foot and cubic yards per foot limitations have been waived.

2. If reclamation is required by other statutes, a copy of the reclamation plan must be submitted with the permit application.

Notification: The permittee must submit a pre-construction-notification to the District Engineer prior to commencing the activity.

APPENDIX 1: GENERAL CONDITIONS

1. *Navigation:* (a) No activity authorized by the RGP may cause more than a minimal adverse effect on navigation. (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the

permittee's expense on authorized facilities in navigable waters of the United States. (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army, or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. *Aquatic Life:* No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. *Spawning Areas:* Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. *Shellfish Beds:* No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to an authorized shellfish harvesting activity, or is a shellfish seeding or habitat restoration activity.

5. *Suitable Materials:* No activity, including structures and work in waters of the U.S. or discharges of dredged or fill material, may use unsuitable material, including auto bodies, tires, garbage or debris, scrap lumber, metal refuse, roofing materials, asphalt or other bituminous material, broken concrete containing asphalt, or any material which would cause water pollution as defined by the Indiana Department of Environmental Management.

6. *Water Supply Intakes:* The permittee shall not perform any work under the RGP where the discharge of dredged and/or fill material will occur in the proximity of a public water supply intake except where the activity is for the repair or improvement of the public water supply intake structures or adjacent bank stabilization.

7. *Safety of Impoundment Structures:* To ensure that all impoundment structures are safely designed, the District Engineer may require non-federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons, i.e., a licensed engineer. The District Engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

8. *Adverse Effects from Impoundments:* If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. *Management of Water Flows:* To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. *Fills Within 100-Year Floodplains:* The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. *Equipment:* All construction equipment shall be refueled and maintained on an upland site away from existing streams, drainage ways and wetland areas. Heavy equipment working in wetlands must be placed on mats, or other measures taken to minimize soil disturbance.

12. *Soil Erosion and Sedimentation Controls:* Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. *Removal of Temporary Fills:* Temporary fills must be removed in their entirety and the affected areas returned to pre-

construction conditions (i.e., elevation, contours, re-establishment of vegetation, etc.).

14. *Proper Maintenance:* Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable general conditions, as well as any activity-specific conditions added by the District Engineer to an RGP authorization.

15. *Single and Complete Project:* The activity must be a single and complete project. The RGP cannot be used more than once for the same single and complete project.

16. *Endangered Species:* (a) No activity is authorized under the RGP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act, or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under the RGP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed. (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the District Engineer with the appropriate documentation to demonstrate compliance with those requirements. The District Engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the RGP activity, or whether additional ESA consultation is necessary. (c) Non-federal permittees must submit a pre-construction notification to the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, and shall not begin work on the activity until notified by the District Engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work. The District Engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-federal applicant of the Corps determination within 45-days of receipt of a complete pre-construction notification. In cases where the non-federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (d) As a result of formal or informal consultation with the USFWS the District Engineer may add species-specific regional endangered species conditions to the RGP. (e) Authorization of an activity under the RGP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS Service, the ESA prohibits any person subject to the jurisdiction of the United States to take listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. (f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS or their webpages on the Internet.

17. *Migratory Birds and Bald and Golden Eagles:* The permittee is responsible for obtaining any "take" permits required under the USFWS' regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the USFWS to determine if such "take" permits are required for a particular activity.

18. *Migratory Bird Breeding Areas:* Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

19. *Historic Properties:* The permittee shall not perform any activity under the RGP which may affect historic properties listed, or eligible for listing, in the National Register of Historic Places until the District Engineer has complied with the provisions of 33 CFR Part 325, Appendix C. The permittee must notify the District Engineer if the activity authorized by the RGP may affect any historic properties listed, determined to be eligible or which the permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin construction until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the IDNR, Division of Historic Preservation and Archaeology.
If the permittee discovers any previously unknown historic or archaeological remains while accomplishing the activity authorized by the RGP, work must be immediately stopped and the Corps immediately notified. The District will initiate the Federal, tribal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National

Register of Historic Places.

20. *Discovery of Previously Unknown Remains and Artifacts:* If you discover any previously unknown historic, cultural, or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the District Engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The District Engineer will initiate the federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

21. *Mitigation:* The permittee shall provide a mitigation proposal that meets the standards set forth in Title 33 CFR Parts 325 and 332, Compensatory Mitigation for Losses of Aquatic Resources, as published April 10, 2008 in the Federal Register, Vol. 73, No. 70, and any District guidance for any activity where the adverse impact (i.e., loss of waters) on special aquatic sites (including wetlands) exceeds 0.10 acre (4,356 sq. ft.) or is determined to be more than minimal impact. The permittee shall also provide a mitigation proposal that meets the standards set forth in Title 33 CFR Parts 325 and 332, Compensatory Mitigation for Losses of Aquatic Resources, as published April 10, 2008 in the Federal Register, Vol. 73, No. 70, and any District guidance for any channelization, encapsulation, or relocation of greater than 300 linear feet of stream, unless there is no net loss of function, in which case the District Engineer will determine, on a case-by-case basis, if mitigation is required.

22. *Water Quality:* If an individual 401 WQC is required, the permittee must provide a copy of it to the Corps. The permittee must comply with any case specific special conditions added by the Corps or by the Section 401 WQC. The conditions imposed in the Section 401 WQC are also conditions of this RGP.

23. *Minimization/Avoidance:* Discharges of dredged or fill material into waters of the U.S. must be minimized or avoided to the maximum extent practicable at the project site (i.e. on-site). In determining the minimal impact threshold, the Districts will consider the direct and secondary impacts of the fill or work and any mitigation measures.

24. *Access:* Representatives from the Corps of Engineers and/or IDEM may inspect any authorized activity or mitigation site at any time deemed necessary to ensure compliance with the terms and conditions of the RGP, Section 401 WQC, and applicable laws.

25. *Construction Period:* If construction of the project has commenced, or is under contract to commence prior to the expiration date, the applicant must complete the project within one (1) year of the RGP expiration date. If you find you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least 3 months prior to the expiration date.

26. *Reporting:* The permittee, after completion of work under the RGP, shall submit a signed certification letter regarding the completed work and required mitigation, if applicable. The certification letter will include a statement that the work was done in accordance with the RGP authorization including compliance with all general and special conditions and completion of mitigation work.

27. *Activities Affecting Structures or Work Built by the United States:* An activity that is located on an existing locally or federally maintained U.S. Army Corps of Engineers project requires separate approval from the District under 33 USC 408.

INDIANA RGP#1
EXCERPT OF INDIANA STATE CERTIFICATION

APPLICANT RESPONSIBILITIES:

(1) AN APPLICANT SEEKING COVERAGE UNDER THIS SECTION 401 WQC MUST:

(A) DEMONSTRATE, VIA LETTER FROM THE INDIANA DEPARTMENT OF NATURAL RESOURCES (IDNR), DIVISION OF NATURE PRESERVES, THAT NO STATE ENDANGERED, THREATENED, OR RARE SPECIES ARE DOCUMENTED ON A PERMANENT OR SEASONAL BASIS WITHIN ½-MILE RADIUS OF THE PROPOSED PROJECT SITE. IF YOU HAVE LISTED SPECIES YOU MUST PROVIDE DOCUMENTATION FROM THE IDNR THAT STATES YOUR PROJECT WILL NOT IMPACT THE LISTED SPECIES.

(B) SUBMIT A COMPLETE SECTION 401 WQC REGIONAL GENERAL PERMIT NOTIFICATION FORM (MOST CURRENT STATE FORM 51937) (REFERRED TO HEREINAFTER AS THE "NOTIFICATION") AT LEAST 30 DAYS PRIOR TO THE ACTIVITY OR RECEIVE VERIFICATION FROM THE IDEM OFFICE OF WATER QUALITY STATING THE PROPOSED PROJECT MEETS THE TERMS AND CONDITIONS OF THIS SECTION 401 WQC. THE NOTIFICATION SUBMITTED TO THE IDEM OFFICE OF WATER QUALITY MUST AT A MINIMUM PROVIDE APPLICANT INFORMATION, PROJECT LOCATION, EXISTING PROJECT SITE CONDITIONS, PROJECT IMPACTS, AND A PROPOSED PLAN. FAILURE TO SUBMIT ALL REQUIRED INFORMATION WILL RESULT IN THE PROJECT BEING CONSIDERED OUT-OF-SCOPE AND NOT AUTHORIZED.

(C) PROVIDE ANY ADDITIONAL INFORMATION REQUIRED BY THE IDEM TO VERIFY THAT A GIVEN PROJECT WILL QUALIFY UNDER THE TERMS AND CONDITIONS OF THIS SECTION 401 WQC. IF THE APPLICANT FAILS TO PROVIDE ANY REQUESTED INFORMATION, THE PROJECT IS NOT AUTHORIZED.

(D) ALLOW THE COMMISSIONER OR AN AUTHORIZED REPRESENTATIVE OF THE COMMISSIONER (INCLUDING AN AUTHORIZED CONTRACTOR), UPON THE PRESENTATION OF CREDENTIALS, TO ENTER UPON THE APPLICANT'S PROPERTY TO INSPECT THE PROJECT SITE DURING THE REVIEW OF A PROPOSED PROJECT.

PERMITTEE RESPONSIBILITIES

(1) PERMITTEES QUALIFYING FOR IMPACTS UNDER THIS SECTION 401 WQC MUST:

(A) EXECUTE THE PROJECT PER THE INFORMATION CONTAINED IN THE NOTIFICATION SUBMITTED TO THE IDEM.

(B) ALLOW THE COMMISSIONER OR AN AUTHORIZED REPRESENTATIVE OF THE COMMISSIONER (INCLUDING AN AUTHORIZED CONTRACTOR), UPON THE PRESENTATION OF CREDENTIALS TO:

1. ENTER UPON THE PERMITTEE'S PROPERTY.
2. ACCESS AND COPY AT REASONABLE TIMES ANY RECORDS THAT MUST BE KEPT UNDER THE CONDITIONS OF THIS CERTIFICATION.
3. INSPECT, AT REASONABLE TIMES, ANY MONITORING OR OPERATIONAL EQUIPMENT OR METHOD; COLLECTION, TREATMENT, POLLUTION MANAGEMENT OR DISCHARGE FACILITY OR DEVICE; PRACTICES REQUIRED BY THIS CERTIFICATION; AND ANY MITIGATION WETLAND SITE.
4. SAMPLE OR MONITOR ANY DISCHARGE OF POLLUTANTS OR ANY MITIGATION SITE.

(C) OBTAIN ANY OTHER PERMITS OR AUTHORIZATIONS REQUIRED FOR THIS PROJECT OR RELATED ACTIVITIES FROM IDEM OR ANY OTHER LOCAL, STATE, OR FEDERAL AGENCY OR PERSON. LAND-DISTURBING ACTIVITIES OF ONE (1) ACRE OR MORE OR DISTURBANCES OF LESS THAN AN ACRE THAT ARE PART OF A LARGER COMMON PLAN WILL REQUIRE PERMIT COVERAGE FOR DISCHARGES ASSOCIATED WITH CONSTRUCTION SITE RUN-OFF. ADDITIONAL INFORMATION SHOULD BE OBTAINED THROUGH THE IDEM STORMWATER PROGRAM AT WWW.IN.GOV/IDEM/STORMWATER OR AT 317-233-1864 OR VIA EMAIL AT STORMWAT@IDEM.IN.GOV. IN ADDITION, THE INDIANA DEPARTMENT OF NATURAL RESOURCES (317-232-4160 OR TOLL FREE AT 877-928-3755) SHOULD BE CONTACTED CONCERNING THE POSSIBLE REQUIREMENT OF NATURAL FRESHWATER LAKE OR FLOODWAY PERMITS.

(D) DEPOSIT ANY DREDGED MATERIAL IN A CONTAINED UPLAND DISPOSAL AREA OUTSIDE OF ANY WATER OF THE STATE AND IMPLEMENT APPROPRIATE MEASURES TO PREVENT SEDIMENT RUN-OFF TO ANY WATERBODY.

(E) INSTALL RUN-OFF AND SEDIMENT CONTROL MEASURES PRIOR TO ANY LAND DISTURBANCE TO MANAGE STORMWATER AND TO MINIMIZE SEDIMENT FROM LEAVING THE PROJECT SITE OR ENTERING A WATERBODY. ALL OPERATIONS MUST PHASE PROJECT ACTIVITIES TO MINIMIZE THE IMPACT OF SEDIMENT TO THE RECEIVING WATERBODY(IES). EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED USING AN APPROPRIATE ORDER OF CONSTRUCTION (SEQUENCING) RELATIVE TO THE LAND-DISTURBING ACTIVITIES. WETLANDS AND/OR WATERBODIES ADJACENT TO LAND-DISTURBING ACTIVITIES MUST BE PROTECTED WITH APPROPRIATE SEDIMENT CONTROL MEASURES. AS WORK PROGRESSES, ALL AREAS VOID OF PROTECTIVE COVER SHALL BE RE-VEGETATED OR STABILIZED AS DESCRIBED IN THE PLAN. AREAS THAT ARE TO BE RE-VEGETATED MUST UTILIZE MULCH THAT IS ANCHORED OR, UNDER MORE SEVERE CONDITIONS, EROSION CONTROL BLANKETS. STANDARDS AND SPECIFICATIONS FOR STORMWATER MANAGEMENT, INCLUDING EROSION AND SEDIMENT CONTROL CAN BE OBTAINED IN THE INDIANA STORMWATER QUALITY MANUAL OR SIMILAR GUIDANCE DOCUMENTS.

TERMS OF THE IDEM SECTION 401 WQC – 2019 RGP

(1) Although a project may meet the terms and conditions of this certification, IDEM may require an individual Section 401 WQC if the agency determines that the project would potentially have more than minimal impacts to water quality, either viewed individually or collectively with other projects that may impact the same watershed affected by the proposed project.

(2) IDEM retains the right to review, modify, terminate, replace or amend this certification as needed to ensure that the federal permits or licenses certified do not result in violations of Indiana's Water Quality Standards or other applicable state laws.

SPECIFIC CONDITIONS OF THIS SECTION 401 WQC

(1)This Section 401 WQC does not:

(a) Convey any property rights of any sort, or any exclusive privileges.

(b) Preempt any duty to obtain federal, state or local permits or authorizations required by law for the execution of the project or related activities.

(2) This Section 401 WQC does not authorize:

(a) Impacts or activities that do not meet the terms and conditions of this Section 401 WQC. Such activities require an individual Section 401 WQC from the IDEM.

(b) Any injury to permittees or private property or invasion of other private rights, or any infringement of federal, state or local laws or regulations.

(c) Changes to the original plan design detailed in the notification.

(d) The discharge of pollutants, principally sediment, associated with storm water run-off.

(e) Discharges of pollutants other than clean fill[1] and uncontaminated dredged material.

(f) Activities on or in any of the State's waters that have been designated as salmonid waters (cold water streams), tributaries of salmonid waters within a two river mile reach upstream from the confluence with the salmonid water, unless the activity meets one or more of the following conditions:

(1) Bank stabilization activities that:

a. Are completed using bioengineered methods, riprap, and/or glacial stone, that conforms to the existing shoreline and does not project out into the channel, and

b. Do not create a wall

c. Do not include the installation of cofferdams, causeways, temporary access roads, or dewatering activities.

(2) Encapsulations that:

a. Are installed to span the width of the ordinary high water mark (OHWM), and are embedded in accordance with Specific Condition 3(f)7 below, and

b. Do not include the installation of cofferdams, causeways, temporary access roads, or dewatering activities.

c. Are installed outside the salmonid fish spawning dated of March 15 through June 15 and from July 15 through November 30.

(g) Activities on or in any Outstanding State and/or National Resource waters (see Attachment #1), or in any critical wetland of critical special aquatic sites (see Attachment #2).

(h) Activities associated with the establishment of a mitigation bank.

(i) Activities that have a cumulative permanent impact of more than twenty-five hundredths (0.25) acre of water of the U.S. Note: Activities that have a cumulative permanent impact to waters of the U.S. of more than one-tenth (0.10) acre must comply with the mitigation requirements listed in Specific Conditions (3)(k) below.

(j) Activities that will have a cumulative permanent impact of more than 500 linear feet of waters of the U.S. Note: Activities that have a cumulative permanent impact to waters of the U.S. of more than 300 linear feet must comply with the mitigation requirements listed in Specific Conditions (3)(l) below.

(k) Activities that will permanently change the sinuosity, flow path, velocity, cross-sectional area under the OHWM, or the slope of a stream[2] except those that may be authorized through compliance with Conditions (3)(a), (3)(d), and (3)(f).

(l) The installation of encapsulations for purposes other than road, driveway, and pedestrian crossings.

(3) This Section 401 WQC authorizes:

(a) Minimal changes to stream morphology, including minor relocations, which result in a net benefit to the aquatic ecosystem. Stream relocations may be authorized, provided the activity:

1. Is associated with the installation of a stream crossing or replacement of an existing crossing, and results in a net benefit to the stream morphology.

2. Does not reduce the cross-sectional area under the OHWM.

3. Is accompanied by an acceptable restoration/stabilization plan.

4. Does not accelerate stream instability. Examples of instability include, but are not limited to, stream bank erosion, channel enlargement, channel incision, degradation, aggradation, meander migration (down-valley and lateral accretion), avulsion and base-level shifts.

(b) Stream bank stabilization activities or new lake and reservoir shoreline stabilization that will permanently affect 300 linear feet or less and the applicant demonstrates that the bank or shoreline in question is unstable. Natural shoreline stabilization methods are required where there is no pre-existing seawall or other shoreline hard armament on a lake or reservoir. Natural shoreline stabilization methods include bank stabilization practices that benefit the aquatic environment by incorporating organic materials to produce functional structures, provide wildlife habitat, and provide areas for revegetation.

(c) Placement of riprap or other bank stabilization materials provided the design and installation is flush with the upstream and downstream bank and stream channel/lake bed elevations and grades.

(d) New bridge piers, piles, shafts or other support structures and their associated scour protection measures that do not significantly reduce the cross-sectional area of the stream and are located below the OHWM and outside the low flow channel of the stream.

(e) Activities that do not result in a permanent secondary effect to waters of the U.S. Potential secondary effects include, but are not limited to damming, loss of hydrology, and creation of in-channel ponds.

(f) Permanent stream encapsulations that:

1. Are for the purpose of constructing a crossing.

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[1] Clean fill, for purposes of this WQC, means uncontaminated rocks, bricks, concrete without rebar, road demolition waste materials other than asphalt, or earthen material.

[2] Stream, for the purposes of this WQC, means waters of the U.S. that have a defined bed and bank and convey water ephemerally, intermittently or perennially. This term includes natural streams, relocated streams, channelized streams, artificial channels, encapsulated channels and ditches.

2. Allow the passage of aquatic organisms in the waterbody.

3. Not exceed 150 cumulative linear feet of encapsulation.

4. Have at least one (1) opening with a cross-sectional area at least twenty percent (20%) larger than the area under the OHWM of the stream immediately upstream and downstream of the encapsulation. If multiple encapsulations are proposed, then the largest culvert meeting the cross sectional area requirement must be positioned in the channel to align with the existing flow of the channel.

5. Have a streambed slope within the encapsulation that matches the slope of the bed both immediately upstream and downstream.

6. Not create or accelerate stream instability. Examples of stream instability include, but are not limited to head cutting, stream bank erosion, channel enlargement, channel incision, degradation, aggradation, meander migration, (down-valley and lateral accretion), avulsion and base-level shifts.

7. Either have no bottom (e.g., three sided culvert) or are embedded (sumped)[3] into the stream channel based on the following structure sizes and substrate types:

(a) Stream bed of sand: Structure < four (4) feet wide: Six (6) inch sump; Structure four (4) feet wide to 12 feet wide: 12 inch sump; Structure 12 feet to 20 feet wide: 18 inch sump

(b) Stream bed of other soil or unconsolidated till [4]: Structure < four (4) feet wide: Three (3) inch sump; Structure four (4) feet wide to 12 feet wide: Six (6) inch sump; Structure 12 feet to 20 feet wide: 12 inch sump

(c)Stream bed of bedrock or consolidated till [5]: Inside elevation of the structure bottom shall be a minimum of three (3) inches below the surface of the bedrock or consolidated till

8. Meet the following requirements when installed in perennial streams with OHWM width of 12 feet or greater. These encapsulations must:

a. Be sumped to a greater depth if needed for the design of the streambed inside the encapsulation.

b. Have a width equal to or wider than the existing OHWM.

c. Have a natural stream bottom. If the stream bottom will be disturbed during construction (e.g. four sided box culverts or pipe culverts or because of footer work for three sided culverts), natural stream substrate must be placed in the encapsulation in accordance with the Federal Highway Administration Hydraulic Engineering Circular No. 26: Culvert Design for Aquatic Organism Passage.

d. Have a low flow channel constructed or restored through the encapsulation. The low flow channel shall have the same width, depth, and side slope as the natural upstream and downstream low flow channel. If the upstream and downstream channels are highly degraded a V-shaped channel with 5:1 slopes within the structure may be substituted.

(g) Stream pump-around activities, provided:

1. The discharge from the activity does not cause erosion at the outlet.

2. Cofferdam dewatering activities are directed to a filter bag(s), upland sediment basins/traps, or a combination of other appropriate sediment control measures to minimize the discharge of sediment-laden water into waters of the U.S.

3. All sediment control measures are installed and maintained in good working order.

4. Any materials used for an in-stream dam are constructed using non erodible materials. Examples include sand bags and sheet pile walls.

(h) The installation of temporary work causeways when the activity is conducted in a manner that maintains near normal downstream flows and is constructed of material that can be expected to withstand high flow events.

(i) The use of temporary structures provided the structures are removed in their entirety and the stream channel restored to preconstruction grades, contours, and vegetative conditions.

(j) Multiple impacts on a project as long as the cumulative amount of those impacts are less than the most restrictive thresholds of this Section 401 WQC.

(k) Cumulative permanent impacts to waters of the state greater than 0.10 acre up to and including 0.25 acre are authorized provided the following conditions are met:

1. The impacts comply with all conditions of this Section 401 Water Quality Certification.

2 .Mitigation is provided for all impacts.

3. Sufficient mitigation credits are available in the service area where the impacts occur. Note: Credits may not be available at all times. Failure to purchase credits before impacting water resources will require an individual 401 WQC and may result in additional mitigation requirements to compensate for temporal loss of water resource functions.

4. Mitigation credits are purchased from an approved compensatory mitigation bank or through the Indiana Stream and Wetland Mitigation Program (in-lieu fee (ILF)). Permittee responsible mitigation is not authorized under this 401 WQC.

5. The amount of mitigation credit purchased is 1:1 for streams, open water, and farmed wetlands, 2:1 for emergent wetland, 3:1 for scrub shrub wetland, 4:1 for forested wetland.

6. The credits are purchased in the bank or ILF service area where the impacts occur.

7. Proof of a finalized credit purchase is provided to IDEM:

a. Before the impacts occur. Note: Banks and ILF programs may require 30 days or more to finalize a purchase.

b. Within one (1) year of IDEM's receipt of the RGP Notification form.

(l) Cumulative permanent impacts to waters of the state greater than 300 linear feet up to and including 500 linear feet provided the following conditions are met:

1. The impacts comply with all conditions of this Section 401 Water Quality Certification.

---

[3] Sump, for the purpose of this Water Quality Certification, means the inside elevation of the bottom of the structure is placed at a specified depth below the grade of the stream.

[4] Other soil and unconsolidated till includes substrates that are more cohesive and less mobile (e.g. clay, silt, gravel, and cobble substrates).

[5] Consolidated till includes dense hard materials such as hardpan.

2. Mitigation is provided for all impacts.

3. Sufficient mitigation credits are available in the service area where the impacts occur. Note: Credits may not be available at all times. Failure to purchase credits before impacting water resources will require an individual 401 WQC and may result in additional mitigation requirements to compensate for temporal loss of water resource functions.

4. Mitigation credits are purchased from an approved compensatory mitigation bank or through the ILF program. Permittee responsible mitigation is not authorized under this 401 WQC.

5. The amount of mitigation credit purchased is 1:1 for streams.

6. The credits are purchased in the bank or ILF service area where the impacts occur.

7. Proof of a finalized credit purchase is provided to IDEM:

a. Before the impacts occur. Note: Banks and ILF programs may require 30 days or more to finalize a purchase.

b. Within one (1) year of IDEM's receipt of the RGP Notification form.

Section 3:
Section 401 – Indiana Department of Environmental Management

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

December 3, 2019

VIA CERTIFIED MAIL **7011 0110 0002 0578 4027**

Mr. Michael Ricketts
U.S. Army Corps of Engineers
Louisville District
P.O. Box 59
Louisville, KY 40201-0059

Dear Mr. Ricketts:

Re: Section 401 Water Quality Certification
Project: 2019 Reissuance of Regional
General Permit No. 1 for Indiana

The Office of Water Quality has reviewed the Joint Public Notice/Application for Section 401 Water Quality Certification (WQC) dated August 22, 2019. According to the application, the U.S. Army Corps of Engineers (USACE) proposes to reissue the Regional General Permit No. 1 (RGP #1) for the state of Indiana. The RGP #1 is intended to authorize categories of activities that are similar in nature and cause minimal individual and cumulative impacts to the aquatic environment.

The Louisville, Detroit, and Chicago Districts of the USACE developed the existing Indiana RGP to replace several Nationwide Permits (NWPs). As a consequence of this action, the following NWPs have been suspended and will not be in effect for the state of Indiana. The USACE proposes to suspend the following:

- NWP 13 Bank Stabilization
- NWP 14 Linear Transportation Projects
- NWP 18 Minor Discharges
- NWP 29 Residential Developments
- NWP 36 Boat Ramps
- NWP 39 Commercial and Institutional Developments
- NWP 40 Agricultural Activities
- NWP 41 Reshaping Existing Drainage Ditches
- NWP 42 Recreational Facilities
- NWP 43 Stormwater Management Facilities
- NWP 44 Mining Activities

Since these NWPs are suspended in Indiana, no Section 401 WQC decision is required.

Based on available information, it is the judgment of this office that the RGP #1 will comply with the applicable provisions of 327 IAC 2 and Sections 301, 302, 303, 306, and 307 of the Clean Water Act if the recipient of the certification complies with the conditions set forth in the Section 401 Water Quality Certification 2019-602-00-JWR-A. Therefore, subject to the terms and conditions of Section 401 Water Quality Certification 2019-602-00-JWR-A, the Indiana Department of Environmental Management (IDEM) grants Section 401 WQC for the RGP #1. Any changes in the language or scope of the RGP #1 not detailed in the Joint Public Notice/Application, or as modified by Section 401 Water Quality Certification 2019-602-00-JWR-A, are not authorized.

If you have any questions about this certification, please contact Jason Randolph, Project Manager, of my staff by email at jrandolp@idem.in.gov or by telephone at 317-233-0467.

Sincerely,

Martha Clark Mettler
Assistant Commissioner
Office of Water Quality

cc: Kimberly Simpson, USACE-Louisville
Aaron Damrill, USACE-Detroit, Michiana Branch
Paul Leffler, USACE-Chicago
Scott Pruitt, USFWS-Bloomington
Matt Buffington, IDNR
Brain Wolff, IDEM Branch Chief – Surface Water, Operations and Enforcement
Randy Braun, IDEM Section Chief Wetlands and Stormwater

Enclosure

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

Section 401 Water Quality Certification for the 2019 Reissuance of Indiana Regional General Permit No. 1

Authorization Number:	2019-602-00-JWR-A
USACE Number:	LRL-2018-00988
Authority:	327 IAC 2. CWA Sections: 301, 302, 303, 306, 307, & 401
Effective Date:	December 3, 2019
Expiration Date:	In the absence of another action by IDEM that would alter the termination date of this certification, this certification shall expire on December 15, 2024, the expiration date of the federal permit this certifies.
Approved:	Martha Clark Mettler Assistant Commissioner Office of Water Quality
Applicant / Permittee:	U.S. Army Corps of Engineers

The Office of Water Quality has reviewed the Joint Public Notice/Application for Section 401 Water Quality Certification (WQC) dated August 22, 2019. According to the application, the U.S. Army Corps of Engineers (USACE) proposes to reissue the Regional General Permit No. 1 (RGP #1) for the state of Indiana. The RGP #1 is intended to authorize categories of activities that are similar in nature and cause minimal individual and cumulative impacts to the aquatic environment.

The Louisville, Detroit, and Chicago Districts of the USACE developed the existing Indiana RGP to replace several Nationwide Permits (NWPs). As a consequence of this

action, the following NWPs have been suspended and will not be in effect for the state of Indiana. The USACE proposes to suspend the following:

- NWP 13 Bank Stabilization
- NWP 14 Linear Transportation Projects
- NWP 18 Minor Discharges
- NWP 29 Residential Developments
- NWP 36 Boat Ramps
- NWP 39 Commercial and Institutional Developments
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- NWP 41 Reshaping Existing Drainage Ditches
- NWP 42 Recreational Facilities
- NWP 43 Stormwater Management Facilities
- NWP 44 Mining Activities

Since these NWPs are suspended in Indiana, no Section 401 WQC decision is required.

Based on available information, it is the judgment of this office that the RGP #1 will comply with the applicable provisions of 327 IAC 2 and Sections 301, 302, 303, 306, and 307 of the Clean Water Act if the recipient of the certification complies with the conditions set forth below. Therefore, subject to the following terms and conditions, the Indiana Department of Environmental Management (IDEM) hereby grants Section 401 WQC for the RGP #1. Any changes in the language or scope of the RGP #1 not detailed in the Joint Public Notice/Application, or as modified by the conditions below, are not authorized by this certification.

APPLICANT RESPONSIBILITIES:

(1) An applicant seeking coverage under this Section 401 WQC must:

(a) Demonstrate, via letter from the Indiana Department of Natural Resources (IDNR), Division of Nature Preserves, that no state endangered, threatened, or rare species are documented on a permanent or seasonal basis within ½-mile radius of the proposed project site. If you have listed species you must provide documentation from the IDNR that states your project will not impact the listed species.

(b) Submit a complete Section 401 WQC Regional General Permit Notification Form (most current State Form 51937) (referred to hereinafter as the "notification") at least 30 days prior to the activity or receive verification from the IDEM Office of Water Quality stating the proposed project meets the terms and conditions of this Section 401 WQC. The notification submitted to the IDEM Office of Water Quality must at a minimum provide applicant information, project location, existing project site conditions, project impacts, and a proposed plan. Failure to submit all required information will result in the project being considered out-of-scope and not authorized.

(c) Provide any additional information required by the IDEM to verify that a given project will qualify under the terms and conditions of this Section 401 WQC. If the applicant fails to provide any requested information, the project is not authorized.

(d) Allow the commissioner or an authorized representative of the commissioner (including an authorized contractor), upon the presentation of credentials, to enter upon the applicant's property to inspect the project site during the review of a proposed project.

PERMITTEE RESPONSIBILITIES

(1) Permittees qualifying for impacts under this Section 401 WQC must:

(a) Execute the project per the information contained in the notification submitted to the IDEM.

(b) Allow the commissioner or an authorized representative of the commissioner (including an authorized contractor), upon the presentation of credentials to:
1. Enter upon the permittee's property.
2. Access and copy at reasonable times any records that must be kept under the conditions of this certification.
3. Inspect, at reasonable times, any monitoring or operational equipment or method; collection, treatment, pollution management or discharge facility or device; practices required by this certification; and any mitigation wetland site.
4. Sample or monitor any discharge of pollutants or any mitigation site.

(c) Obtain any other permits or authorizations required for this project or related activities from IDEM or any other local, state, or federal agency or person. Land-disturbing activities of one (1) acre or more or disturbances of less than an acre that are part of a larger common plan will require permit coverage for discharges associated with construction site run-off. Additional information should be obtained through the IDEM Stormwater Program at www.in.gov/idem/stormwater or at 317-233-1864 or via email at Stormwat@idem.IN.gov. In addition, the Indiana Department of Natural Resources (317-232-4160 or toll free at 877-928-3755) should be contacted concerning the possible requirement of natural freshwater lake or floodway permits.

(d) Deposit any dredged material in a contained upland disposal area outside of any water of the state and implement appropriate measures to prevent sediment run-off to any waterbody.

(e) Install run-off and sediment control measures prior to any land disturbance to manage stormwater and to minimize sediment from leaving the project site or entering a waterbody. All operations must phase project activities to minimize the impact of sediment to the receiving waterbody(ies). Erosion and sediment

control measures shall be implemented using an appropriate order of construction (sequencing) relative to the land-disturbing activities. Wetlands and/or waterbodies adjacent to land-disturbing activities must be protected with appropriate sediment control measures. As work progresses, all areas void of protective cover shall be re-vegetated or stabilized as described in the plan. Areas that are to be re-vegetated must utilize mulch that is anchored or, under more severe conditions, erosion control blankets. Standards and specifications for stormwater management, including erosion and sediment control can be obtained in the Indiana Stormwater Quality Manual or similar guidance documents.

TERMS OF THIS SECTION 401 WQC:

(1) Although a project may meet the terms and conditions of this certification, IDEM may require an individual Section 401 WQC if the agency determines that the project would potentially have more than minimal impacts to water quality, either viewed individually or collectively with other projects that may impact the same watershed affected by the proposed project.

(2) IDEM retains the right to review, modify, terminate, replace or amend this certification as needed to ensure that the federal permits or licenses certified do not result in violations of Indiana's Water Quality Standards or other applicable state laws.

SPECIFIC CONDITIONS OF THIS SECTION 401 WQC

(1) This Section 401 WQC does not :

(a) Convey any property rights of any sort, or any exclusive privileges.

(b) Preempt any duty to obtain federal, state or local permits or authorizations required by law for the execution of the project or related activities.

(2) This Section 401 WQC does not authorize:

(a) Impacts or activities that do not meet the terms and conditions of this Section 401 WQC. Such activities require an individual Section 401 WQC from the IDEM.

(b) Any injury to permittees or private property or invasion of other private rights, or any infringement of federal, state or local laws or regulations.

(c) Changes to the original plan design detailed in the notification.

(d) The discharge of pollutants, principally sediment, associated with stormwater run-off.

(e) Discharges of pollutants other than clean fill[1] and uncontaminated dredged material.

(f) Activities on or in any of the State's waters that have been designated as salmonid waters (cold water streams) or tributaries of salmonid waters within a two river mile reach upstream from the confluence with the salmonid water unless the activity meets one or more of the following conditions:

1. Bank stabilization activities that:
    a. Are completed using bioengineered methods, riprap, and/or glacial stone, that conforms to the existing shoreline and does not project out into the channel, and
    b. Do not create a wall.
    c. Do not include the installation of cofferdams, causeways, temporary access roads, or dewatering activities.
2. Encapsulations that:
    a. Are installed to span the width of the ordinary high water mark (OHWM), and are embedded in accordance with Specific Condition 3(f)7 below, and
    b. Do not include the installation of cofferdams, causeways, temporary access roads, or dewatering activities.
    c. Are installed outside the salmonid fish spawning dates of March 15 through June 15 and from July 15 through November 30.
3. Work is conducted outside the salmonid fish spawning dates of March 15 through June 15 and from July 15 through November 30.

(g) Activities on or in any Outstanding State and/or National Resource waters (see Attachment #1), or in any critical wetland or critical special aquatic sites (see Attachment #2).

(h) Activities associated with the establishment of a mitigation bank.

(i) Activities that have a cumulative permanent impact of more than twenty-five hundredths (0.25) acre of waters of the U.S. Note: Activities that have a cumulative permanent impact to waters of the U.S. of more than one-tenth (0.10) acre must comply with the mitigation requirements listed in Specific Conditions (3)(k) below.

(j) Activities that will have a cumulative permanent impact of more than 500 linear feet of waters of the U.S. Note: Activities that have a cumulative permanent impact to waters of the U.S. of more than 300 linear feet must comply with the mitigation requirements listed in Specific Conditions (3)(l) below.

(k) Activities that will permanently change the sinuosity, flow path, velocity, cross-sectional area under the Ordinary High Water Mark (OHWM), or the slope of

[1] Clean fill, for purposes of this WQC, means uncontaminated rocks, bricks, concrete without rebar, road demolition waste materials other than asphalt, or earthen material.

a stream[2] except those that may be authorized through compliance with Conditions (3)(a), (3)(d), and (3)(f).

(l) The installation of encapsulations for purposes other than road, driveway, and pedestrian crossings.

(3) This Section 401 WQC authorizes:

(a) Minimal changes to stream morphology, including minor relocations, which result in a net benefit to the aquatic ecosystem. Stream relocations may be authorized, provided the activity:
1. Is associated with the installation of a stream crossing or replacement of an existing crossing, and results in a net benefit to the stream morphology.
2. Does not reduce the cross-sectional area under the OHWM.
3. Is accompanied by an acceptable restoration/stabilization plan.
4. Does not accelerate stream instability. Examples of instability include, but are not limited to, stream bank erosion, channel enlargement, channel incision, degradation, aggradation, meander migration (down-valley and lateral accretion), avulsion and base-level shifts.

(b) Stream bank stabilization activities or new lake and reservoir shoreline stabilization that will permanently affect 500 linear feet or less and the applicant demonstrates that the bank or shoreline in question is unstable. Natural shoreline stabilization methods are required where there is no pre-existing seawall or other shoreline hard armament on a lake or reservoir. Natural shoreline stabilization methods include bank stabilization practices that benefit the aquatic environment by incorporating organic materials to produce functional structures, provide wildlife habitat, and provide areas for revegetation.

(c) Placement of riprap or other bank stabilization materials provided the design and installation is flush with the upstream and downstream bank and stream channel/lake bed elevations and grades.

(d) New bridge piers, piles, shafts or other support structures and their associated scour protection measures that do not significantly reduce the cross-sectional area of the stream and are located below the OHWM and outside the low flow channel of the stream.

(e) Activities that do not result in a permanent secondary effect to waters of the U.S. Potential secondary effects include, but are not limited to damming, loss of hydrology, and creation of in-channel ponds.

(f) Permanent stream encapsulations that:
1. Are for the purpose of constructing a crossing.

---

[2] Stream, for the purposes of this WQC, means waters of the U.S. that have a defined bed and bank and convey water ephemerally, intermittently or perennially. This term includes natural streams, relocated streams, channelized streams, artificial channels, encapsulated channels and ditches.

2. Allow the passage of aquatic organisms in the waterbody.
3. Do not exceed 150 cumulative linear feet of encapsulation.
4. Have at least one (1) opening with a cross-sectional area at least twenty percent (20%) larger than the area under the OHWM of the stream immediately upstream and downstream of the encapsulation. If multiple encapsulations are proposed, then the largest culvert meeting the cross sectional area requirement must be positioned in the channel to align with the existing flow of the channel.
5. Have a streambed slope within the encapsulation that matches the slope of the bed both immediately upstream and downstream.
6. Do not create or accelerate stream instability. Examples of stream instability include, but are not limited to head cutting, stream bank erosion, channel enlargement, channel incision, degradation, aggradation, meander migration, (down-valley and lateral accretion), avulsion and base-level shifts.
7. Either have no bottom (e.g., three sided culvert) or are embedded (sumped)[3] into the stream channel based on the following structure sizes and substrate types:
   a. Stream bed of sand
      - Structure < four (4) feet wide: Six (6) inch sump
      - Structure four (4) feet wide to 12 feet wide: 12 inch sump
      - Structure 12 feet to 20 feet wide: 18 inch sump
   b. Stream bed of other soil or unconsolidated till [4]
      - Structure < four (4) feet wide: Three (3) inch sump
      - Structure four (4) feet wide to 12 feet wide: Six (6) inch sump
      - Structure 12 feet to 20 feet wide: 12 inch sump
   c. Stream bed of bedrock or consolidated till [5]
      - Inside elevation of the structure bottom shall be a minimum of three (3) inches below the surface of the bedrock or consolidated till
8. Meet the following requirements when installed in perennial streams with OHWM width of 12 feet or greater. These encapsulations must:
   a. Be sumped to a greater depth if needed for the design of the streambed inside the encapsulation.
   b. Have a width equal to or wider than the existing OHWM.
   c. Have a natural stream bottom. If the stream bottom will be disturbed during construction (e.g. four sided box culverts or pipe culverts or because of footer work for three sided culverts), natural stream substrate must be placed in the encapsulation in accordance with the Federal Highway Administration Hydraulic Engineering Circular No. 26: Culvert Design for Aquatic Organism Passage.

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[3] Sump, for the purpose of this Water Quality Certification, means the inside elevation of the bottom of the structure is placed at a specified depth below the grade of the stream.

[4] Other soil and unconsolidated till includes substrates that are more cohesive and less mobile (e.g. clay, silt, gravel, and cobble substrates).

[5] Consolidated till includes dense hard materials such as hardpan.

d. Have a low flow channel constructed or restored through the encapsulation. The low flow channel shall have the same width, depth, and side slope as the natural upstream and downstream low flow channel. If the upstream and downstream channels are highly degraded a V-shaped channel with 5:1 slopes within the structure may be substituted.

(g) Stream pump-around activities, provided:
1. The discharge from the activity does not cause erosion at the outlet.
2. Cofferdam dewatering activities are directed to a filter bag(s), upland sediment basins/traps, or a combination of other appropriate sediment control measures to minimize the discharge of sediment-laden water into waters of the U.S.
3. All sediment control measures are installed and maintained in good working order.
4. Any materials used for an in-stream dam are constructed using non erodible materials. Examples include sand bags and sheet pile walls.

(h) The installation of temporary work causeways when the activity is conducted in a manner that maintains near normal downstream flows and is constructed of material that can be expected to withstand high flow events.

(i) The use of temporary structures provided the structures are removed in their entirety and the stream channel restored to preconstruction grades, contours, and vegetative conditions.

(j) Multiple impacts on a project as long as the cumulative amount of those impacts are less than the most restrictive thresholds of this Section 401 WQC.

(k) Cumulative permanent impacts to waters of the state greater than 0.10 acre up to and including 0.25 acre are authorized provided the following conditions are met:
1. The impacts comply with all conditions of this Section 401 Water Quality Certification.
2. Mitigation is provided for all impacts.
3. Sufficient mitigation credits are available in the service area where the impacts occur. Note: Credits may not be available at all times. Failure to purchase credits before impacting water resources will require an individual 401 WQC and may result in additional mitigation requirements to compensate for temporal loss of water resource functions.
4. Mitigation credits are purchased from an approved compensatory mitigation bank or through the Indiana Stream and Wetland Mitigation Program (in-lieu fee (ILF)). Permittee responsible mitigation is not authorized under this 401 WQC.
5. The amount of mitigation credit purchased is 1:1 for streams, open water, and farmed wetlands, 2:1 for emergent wetland, 3:1 for scrub shrub wetland, 4:1 for forested wetland.

6. The credits are purchased in the bank or ILF service area where the impacts occur.
7. Proof of a finalized credit purchase is provided to IDEM:
   a. Before the impacts occur. Note: Banks and ILF programs may require 30 days or more to finalize a purchase.
   b. Within one (1) year of IDEM's receipt of the RGP Notification form.

(l) Cumulative permanent impacts to waters of the state greater than 300 linear feet up to and including 500 linear feet provided the following conditions are met:

1. The impacts comply with all conditions of this Section 401 Water Quality Certification.
2. Mitigation is provided for all impacts.
3. Sufficient mitigation credits are available in the service area where the impacts occur. Note: Credits may not be available at all times. Failure to purchase credits before impacting water resources will require an individual 401 WQC and may result in additional mitigation requirements to compensate for temporal loss of water resource functions.
4. Mitigation credits are purchased from an approved compensatory mitigation bank or through the ILF program. Permittee responsible mitigation is not authorized under this 401 WQC.
5. The amount of mitigation credit purchased is 1:1 for streams.
6. The credits are purchased in the bank or ILF service area where the impacts occur.
7. Proof of a finalized credit purchase is provided to IDEM:
   a. Before the impacts occur. Note: Banks and ILF programs may require 30 days or more to finalize a purchase.
   b. Within one (1) year of IDEM's receipt of the RGP Notification form.

Failure to comply with the terms and conditions of this Section 401 Water Quality Certification may result in an enforcement action. If an enforcement action is pursued, civil penalties could be assessed up to $25,000 per day. Criminal liability may apply if it is determined that the Section 401 Water Quality Certification was violated willfully or negligently.

Notice of Right to Administrative Review

If you wish to challenge this permit, you must file a Petition for Administrative Review with the Office of Environmental Adjudication (OEA), and serve a copy of the petition upon IDEM. The requirements for filing a Petition for Administrative Review are found in IC 4-21.5-3-7, IC 13-15-6-1 and 315 IAC 1-3-2. A summary of the requirements of these laws is provided below.

A Petition for Administrative Review must be filed with the Office of Environmental Adjudication (OEA) within fifteen (15) days of the issuance of this notice (eighteen (18) days if you received this notice by U.S. Mail), and a copy must be served upon IDEM.

Addresses are:

Director	Commissioner
Office of Environmental Adjudication	Indiana Dept. of Environmental Management
Indiana Government Center North	Indiana Government Center North
100 North Senate Avenue, Room N103	100 North Senate Avenue, Room 1301
Indianapolis, Indiana 46204	Indianapolis, Indiana 46204

The petition must contain the following information:

(a) The name, address and telephone number of each petitioner.
(b) A description of each petitioner's interest in the permit.
(c) A statement of facts demonstrating that each petitioner is:
    (1) a person to whom the order is directed;
    (2) aggrieved or adversely affected by the permit; or
    (3) entitled to administrative review under any law.
(d) The reasons for the request for administrative review.
(e) The particular legal issues proposed for review.
(f) The alleged environmental concerns or technical deficiencies of the denial.
(g) The permit terms and conditions that the petitioner believes would be appropriate and would comply with the law.
(h) The identity of any persons represented by the petitioner.
(i) The identity of the person against whom administrative review is sought.
(j) A copy of the permit that is the basis of the petition.
(k) A statement identifying petitioner's attorney or other representative, if any.

Failure to meet the requirements of the law with respect to a Petition for Administrative Review may result in a waiver of your right to seek administrative review of the permit. Examples are:

(a) Failure to file a Petition by the applicable deadline;
(b) Failure to serve a copy of the Petition upon IDEM when it is filed; or
(c) Failure to include the information required by law.

If you seek to have a permit stayed during the administrative review, you may need to file a Petition for a Stay of Effectiveness. The specific requirements for such a Petition can be found in 315 IAC 1-3-2 and 315 IAC 1-3-2.1.

Pursuant to IC 4-21.5-3-17, OEA will provide all parties with notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action. If you are entitled to notice under IC 4-21.5-3-5(b) and would like to obtain notices of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action without intervening in the proceeding you must submit a written request to OEA at the address above.

If you have procedural or scheduling questions regarding your Petition for Administrative Review, additional information on the review process is available at the website of the Office of Environmental Adjudication at http://www.in.gov/oea.

APPENDIX E

Form 96

CONTRACTOR'S BID FOR PUBLIC WORK - FORM 96

State Form 52414 (R2 / 2-13) / Form 96 (Revised 2013)
Prescribed by State Board of Accounts

PART I
(To be completed for all bids. Please type or print)

Date *(month, day, year)*:_____

1. Governmental Unit (Owner):_____
2. County :_____
3. Bidder (Firm):_____

   Address:_____

   City/State/ZIPcode:_____
4. Telephone Number:_____
5. Agent of Bidder *(if applicable)*:_____

Pursuant to notices given, the undersigned offers to furnish labor and/or material necessary to complete the public works project of _____

(Governmental Unit) in accordance with plans and specifications prepared by _____

_____ and dated _____ for the sum of

_____ $_____

The undersigned further agrees to furnish a bond or certified check with this bid for an amount specified in the notice of the letting. If alternative bids apply, the undersigned submits a proposal for each in accordance with the notice. Any addendums attached will be specifically referenced at the applicable page.

If additional units of material included in the contract are needed, the cost of units must be the same as that shown in the original contract if accepted by the governmental unit. If the bid is to be awarded on a unit basis, the itemization of the units shall be shown on a separate attachment.

The contractor and his subcontractors, if any, shall not discriminate against or intimidate any employee, or applicant for employment, to be employed in the performance of this contract, with respect to any matter directly or indirectly related to employment because of race, religion, color, sex, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the contract.

CERTIFICATION OF USE OF UNITED STATES STEEL PRODUCTS
(If applicable)

I, the undersigned bidder or agent as a contractor on a public works project, understand my statutory obligation to use steel products made in the United States (I.C. 5-16-8-2). I hereby certify that I and all subcontractors employed by me for this project will use U.S. steel products on this project if awarded. I understand that violations hereunder may result in forfeiture of contractual payments.

ACCEPTANCE

The above bid is accepted this _____ day of _____, _____, subject to the following conditions: _____

_____

Contracting Authority Members:

_____ _____

_____ _____

_____ _____

PART II

(For projects of $100,000 or more – IC 36-1-12-4)

Governmental Unit: _____

Bidder (Firm) _____

Date *(month, day, year):* _____

These statements to be submitted under oath by each bidder with and as a part of his bid. Attach additional pages for each section as needed.

SECTION I EXPERIENCE QUESTIONNAIRE

1. What public works projects has your organization completed for the period of one (1) year prior to the date of the current bid?

Contract Amount	Class of Work	Completion Date	Name and Address of Owner

2. What public works projects are now in process of construction by your organization?

Contract Amount	Class of Work	Expected Completion Date	Name and Address of Owner

3. Have you ever failed to complete any work awarded to you? _____ If so, where and why?

4. List references from private firms for which you have performed work.

SECTION II PLAN AND EQUIPMENT QUESTIONNAIRE

1. Explain your plan or layout for performing proposed work. *(Examples could include a narrative of when you could begin work, complete the project, number of workers, etc. and any other information which you believe would enable the governmental unit to consider your bid.)*

2. Please list the names and addresses of all subcontractors *(i.e. persons or firms outside your own firm who have performed part of the work)* that you have used on public works projects during the past five (5) years along with a brief description of the work done by each subcontractor.

3. If you intend to sublet any portion of the work, state the name and address of each subcontractor, equipment to be used by the subcontractor, and whether you will require a bond. However, if you are unable to currently provide a listing, please understand a listing must be provided prior to contract approval. Until the completion of the proposed project, you are under a continuing obligation to immediately notify the governmental unit in the event that you subsequently determine that you will use a subcontractor on the proposed project.

4. What equipment do you have available to use for the proposed project? Any equipment to be used by subcontractors may also be required to be listed by the governmental unit.

5. Have you entered into contracts or received offers for all materials which substantiate the prices used in preparing your proposal? If not, please explain the rationale used which would corroborate the prices listed.

SECTION III CONTRACTOR'S FINANCIAL STATEMENT

Attachment of bidder's financial statement is mandatory. Any bid submitted without said financial statement as required by statute shall thereby be rendered invalid. The financial statement provided hereunder to the governing body awarding the contract must be specific enough in detail so that said governing body can make a proper determination of the bidder's capability for completing the project if awarded.

SECTION IV CONTRACTOR'S NON – COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to include anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such sale.

SECTION V OATH AND AFFIRMATION

I HEREBY AFFIRM UNDER THE PENALTIES FOR PERJURY THAT THE FACTS AND INFORMATION CONTAINED IN THE FOREGOING BID FOR PUBLIC WORKS ARE TRUE AND CORRECT.

Dated at _____ this _____ day of _____, _____

_____
(Name of Organization)

By_____

_____
(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF _____)
) ss
COUNTY OF_____)

Before me, a Notary Public, personally appeared the above-named _____ and swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to before me this _____ day of _____, _____.

_____
Notary Public

My Commission Expires:_____

County of Residence:_____

Part of State Form 52414 (R2 / 2-13) / Form 96 (Revised 2013)

BID OF

_____
(Contractor)

_____
(Address)

_____

FOR

PUBLIC WORKS PROJECTS

OF

_____

_____

_____

Filed _____, _____

Action taken _____

_____